

EVERYTHING IS AWESOME - USING LEGO® TO ENGAGE WITH COMMUNITIES

Practice Paper

Author

Jake Roos (presenter)

MAppSc BSc (Hons)

Director

Jake Roos Consulting Ltd

director@jakeroosconsulting.co.nz

022 6871980

ABSTRACT

Lego® is a global phenomenon with broad appeal. Using Lego® bricks as a medium to explain and explore public projects is an effective means to engage people, to increase their understanding and gather their views. Kāpiti Coast District Council has used Lego® to explain its LED streetlight programme, the implementation of a cycle hook turn at a major intersection upgrade and create a shared vision for the future Paraparaumu Town Centre. The latter project won an Award from the International Association of Public Participation. All the projects were implemented by a variety of community groups, businesses and individual Lego® enthusiasts from ages 5 to 78 working together. This breadth of involvement led to a greater public understanding of the subject matter than otherwise might have been achieved.

INTRODUCTION

Godtfred Kirk Christiansen developed the Lego® brick design and patented it in 1958, as a system of imaginative play that has since developed to become a global phenomenon. Lego® was voted the most popular toy of the last 100 years in a 2004 survey by the V&A Museum of Childhood in London (Herman, 2012). The Lego® Group (TLG) is now the world's largest toy company by revenue (Wikipedia, n.d.). Its product appeals to males and females, young and old alike.

Lego® has many advantages as a creative medium; namely, that it is easy to use, requires no tools, paints or adhesives, can be endlessly reused and rebuilt into new forms, is highly versatile and can make relatively sturdy, durable models (or ones that can be easily repaired) of practically any size.

Lego® has long been used for educational purposes in schools and colleges (TLG's Educational Products Department was formed in 1980), for example for computer programming and robotics, because of the ease with which complex structures and mechanisms can be created and modified.

From the introduction of the first 'sets' in the mid-1950s through to the present, Lego® has always been used for creating model town and city layouts with shops, amenities, transport and houses (Figure 1). The introduction of a huge variety of new elements and characters from the realistic to fantastic over the years has opened the possibilities further to the visions of environments and architecture, from the past, present or future, that can be built.



Figure 1: the Town Plan theme from 1958 and a modern equivalent: the Town Square set from 2013 ©TLG

Its intergenerational popularity means there is a wide base of Lego® users of all ages in the community, and a significant resource of bricks. This paper explores the way these natural advantages have been harnessed by the Kāpiti Coast District Council to engage with communities on projects and matters affecting them.

LEGO® ECO-TOWN

The Council's use of Lego® for public engagement emerged from a desire to bring fun and creativity to what might otherwise be the rather 'dry' work of Council. The Council ran the 'Sustainable Home and Garden Show' as its annual flagship event from 2005 to 2015. The Show was held over two days at the end of March, and attracted between 4,000 – 8,000 people. The event involved entertainment, food, commercial exhibitors, community groups, schools and Council, and was held at Kāpiti Primary School in Paraparaumu. At each show there were several Council exhibits for the purpose of providing independent advice on sustainable practices or

showcasing its work.

For the 2014 Show, there was a desire to highlight the Council's work to reduce its greenhouse gas emissions and energy costs, and the opportunities available to do more of this in the future, which the public could have a say on in the upcoming annual plan consultation. One of the biggest opportunities was the adoption of light emitting diode (LED) street lighting technology, which the Council was beginning to deploy on its road network. However, the staff faced the challenge of demonstrating a technology meant for lighting roads and paths at night during the Show, which was held on a grass field during the day. Logically, a 'blackout' tent was needed to exclude daylight, so the quality of white LED light could be appreciated compared to the orange light of traditional high pressure sodium (HPS) lamp. But this in turn presented a problem of simultaneously providing visitors to the Show a strong incentive to come into a darkened tent, and providing something for the different lights to illuminate.

As the Show was an all-ages event, meant to provide child and family-friendly activities, the idea of building a model Lego® 'eco' town with the community that would be illuminated with LED and HPS lights was chosen a solution. This concept went to the heart of the Show's themes of celebrating place, sustainability, collaborative effort and creativity. It also allowed other areas of the Council's work – spatial planning, town centres and urban design – to be brought to life, all within one exhibit. Figure 2 shows the layout of the town model.

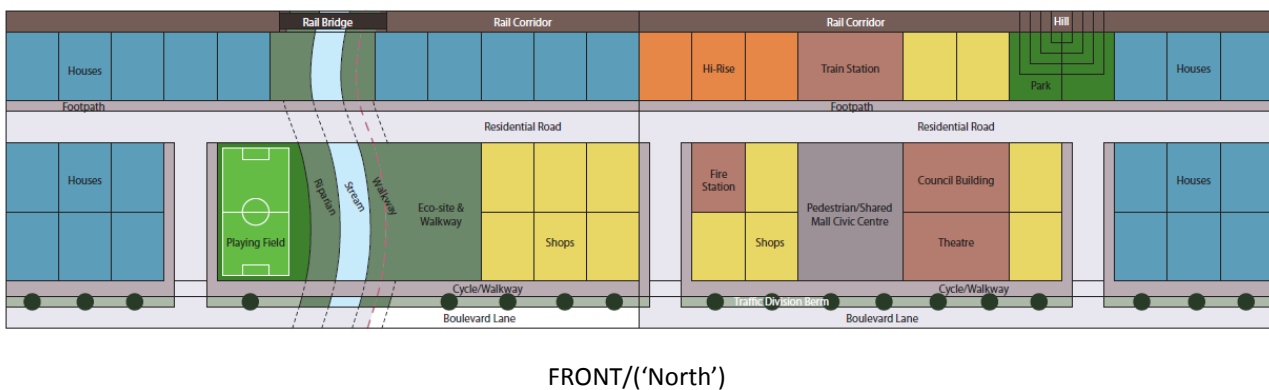


Figure 2: the layout of the 2014 eco town model. The colours denote different land use zones. Vehicles were arranged on the roads.

Partners were crucial to providing the different parts of the exhibit, and these were sought first to ensure the project would be successful. These were:

- Lego® enthusiasts of all ages were invited to build models using their own collections of bricks, with the incentive of prizes for the best models.
- Toyworld Paraparaumu, owned and managed by Steve and Mandi Carmine, were the primary sponsor. They assisted by promoting the initiative to find builders and provide prizes, and they also helped steer the project.
- MenzShed Kāpiti, a group that brings retired men together to make use of their handyman and carpentry skills for community projects, was approached to build a sealed display case for the town.
- Philips Lighting and Stones Electrical provided the LED and HPS street lamps mounted on a pole with a toggle switch and power-use display.

The project and the call for builders were also promoted through school newsletters and the local newspapers.

The space within the display case, to be 4.8 m long and 1.2 m deep in area was subdivided into a

town layout with individual land plots, zoned into different uses (residential, commercial, high-rise) with provision of space for infrastructure and amenities such as roads, shared paths, a railway, parks and a civic precinct as shown in figure 2. Builders were invited to register their interest and express a preference for building a house, shop, high-rise or vehicle. Later, the builders were invited to volunteer to build special features of the town like a theatre, fire station and train station. All co-ordination and communication with the builders was via the Council website, email and a Facebook page. There were 8-weeks from when the time builders were sought to the time of the Show. Over 60 builders participated from ages 4 to 75.

Builders were advised of some basic principles to ‘think about’ while building their model. These were:

- *Building to the sun and ‘passive’ design*
- *Saving energy, saving water*
- *Fitting in gardens and green spaces, even in tight spots*
- *Encouraging active travel and public transport*
- *Making buildings attractive, safe and practical for everyone*
- *Have fun! It’s Lego® after all, so inject some craziness if you like.*

The maximum sizes of the plots and width of vehicles in Lego® stud and mm units were specified for builders to work within. The scale of the models relative to the real world was not specified other than that they should be the right size for standard Lego® minifigures, which are 45 mm tall.

The horizontal layout and a vertical backdrop mural representing the foothills behind Paraparaumu was painted onto the plywood case by a local artist. The whole town was assembled the day before the Show. The train, located at the back of the layout was put in first. A local electronics enthusiast was enlisted to set up a programmed motor to drive the train backwards and forwards from one end of the case to the other using a pulley system, concealed under the display case.

The builders had a photo taken with their model before it was placed in their designated spot. This was useful for acknowledging each builder’s efforts, to promote the initiative (e.g. through social media) and for keeping a log of which models belonged to who to enable them to be returned complete to their rightful owner. Once all the models were put in, they were sealed in behind clear polycarbonate sheets. Finally, the lighting was set up. Also, within the blackout tent was information on Council’s other energy and emissions saving work, and Lego® play tables where visitors to the Show could make their own creations.



Figure 3: L - pedestrianized civic centre of the 2014 eco-town display. R – Removing the polycarbonate barrier from the display case. Also visible is the LED and HPS lighting mounted on a pole.

The town featured models of a few real-world landmarks from Paraparaumu including the Statue of

Our Lady of Lourdes, the council office and the Antoni Gaudi-esque eel-shaped seat sculpture adjacent to it. As the theme of the overall Show was 'Bees, Butterflies and Bugs', models of giant insects were put into the town to add interest and humour.

8,000 people visited the Show over the 2 days. Council staff, including members of the planning team, staffed the eco-town display and used it as a conversation starter regarding sustainable design, urban planning, active transport, LED lights and energy conservation in general, particularly with parents while their children were occupied. A panel of judges selected winners of ten different prizes and these were awarded at a ceremony on the second day of the Show. The builders showed skill and imagination creating their original models, and they had embraced the sustainability message, building models with renewable power, green walls and roof gardens, recycled materials, electric and active transport options and their own water supplies.

The participants rated the experience highly, unanimously said they would like to do it again, and expressed interest when asked about holding workshops in preparation, to learn more about building techniques, sustainable design and town planning. Visitors to the Show rated the Lego® eco-town exhibit as very good overall.

"Just have to say that (as a mum of my 6 year old who built a model) we made it a priority to attend the sustainable home and garden show and it was the first time that we have. Every other year it was a 'nice to go' type thing but we always ran out of time. However, because of Lego® town, we had to go, and we loved it. Furthermore, my son was really interested in town planning and eco-design and we were able to do some learning around those things (even though he only built a vehicle) during the weeks leading up to the event when otherwise it wouldn't have been on the radar. Thanks for the great event....for what could've been a logistical nightmare, it was fantastic".

All the builders received a Certificate of Acknowledgement and a small gift (donated by Toyworld) when they collected their models.

KĀPITI ROAD CYCLE HOOK TURN MOVIE

Later in 2014, the Council embarked on a second, quite different Lego® engagement project. The Council was upgrading the intersection between Kāpiti Road, Milne Drive and Te Roto Drive in Paraparaumu, widening it and adding cycle lanes and traffic signals. As part of this, the road marking would include cycle 'hook turn' bays in order for cyclists to safely make a right hand turn across three lanes of traffic. The marked-out hook-turn system is uncommon in New Zealand, and the Council, working with advocacy group Kāpiti Cycling Inc., agreed that a special effort would be needed to communicate how they are used by both cyclists and motorists.

It was decided that a stop-motion animation (where a series of photos with subtle changes between them are run together to make the illusion of movement) of how to use the hook-turn would be made, drawing on the skills of two young film-makers, students at Kāpiti College – Mason Packer and Dylan Thomas. Once again, the novelty and popularity of Lego® would be used to make a potentially 'dry' topic engaging. The project was distinctly different from the original Lego® eco-town in that it was crucial to accurately and recognisably represent a specific real place and in particular, the exact road layout.

To do this, the road layout design was scaled to match, so that an 8 stud (64mm wide) Lego® car would fit neatly in the lanes. This set the size of the models of the surrounding buildings at 1:40 scale, generally regarded as the maximum scale consistent with standard Lego® minifigures. The road layout was then printed as vinyl transfers onto five MDF board 'tiles', each 2.4m x1.2 m size that could be assembled as a base for filming. The back panels from the Lego® Town display case had support structures added and were used as backdrops for filming.

An adult Lego® model builder was brought on to construct lifelike replicas of the buildings around the intersection, along with vehicles, traffic signals and other features. He worked with the filmmakers to establish which buildings would be seen within the shots, and the shots in turn were selected to clearly depict the action with the minimum number of buildings.



Figure 4: Two examples of the real buildings near the Kāpiti Rd/Milne Drive/Te Roto Rd intersection and the model replicas created for the movie.

The models were built to mimic the real world using photographs, including aerial photographs. In total 11 buildings were replicated (see figure 4), including the Paraparaumu Fire Station, Whitireia Polytechnic building and Z service station. Lego® bricks themselves were used to create simplified sign-writing, rather than using printing custom stickers.



Figure 5: Director setting up for filming on the completed 'set' at Kāpiti College, while young fans look on.

Facilities at Kāpiti College were used for filming and editing (see figure 5). The consultants working on the intersection upgrade project, GHD, provided advice to ensure the sequencing of the traffic signals shown in the film was accurate.

The film was released on the Council's YouTube channel on 22 October 2014, to coincide with the completion of the intersection works. In addition, the models and other collateral including the Lego® eco-town display case were used to make an instructional display in the Paraparaumu Library (see figure 6). It had the film playing to demonstrate the hook-turn and the printed road layout, with arrows and instructions added, was placed on the ground in front of the display case, to allow people to 'walk through' the manoeuvre.



Figure 6: The resources created for the movie and the original eco-town were re-used to make a display in the Paraparaumu Library explaining the cycle hook-turn manoeuvre

The video has had 1,661 views on YouTube. The initiative was praised in the local press by Kapiti Cycling Inc.:

"...the council and its staff deserve a lot of credit for the effort they have made to explain how the intersection works, and the innovative method they used to capture the public's attention. Thanks and well done team." Lynn Sleeth, Paraparaumu, Kapiti News 12-11-2014

LEGO® TOWN CENTRE (PARAPARAUMU 2035)

Following on from the success of the earlier projects, the Council looked to make use of Lego® a third time to promote its town centre's project and Long Term Plan consultation in 2015. The basic concept was the same as the 2014 Lego® eco-town, with some important differences in execution:

- Rather than being loosely based on Paraparaumu, the model and layout was a 1:50 scale representation of the actual Paraparaumu town centre, including the civic precinct, but imagined how it would be in 2035. The basic layout was informed by the concept plans for the area developed through earlier community consultation (Figure 7).
- As a result, scale models of the real buildings still likely to be present in the area in 2035 were needed, some over 1 metre long.
- It was bigger - the display case was expanded to by 6.0m by 1.8m, representing 300m x

90m of the real world.

- There was a series of workshops prior to the Sustainable Home and Garden Show for builders to meet, work together directly and learn about urban planning, the work of the Council, sustainability and futurism to inform their models.
- Because the model was going to be more 'specific' than before, builders were gifted Lego® bricks to use for their models and then keep as a reward.



Figure 7: the overall Paraparaumu Town Centre concept plan, looking west from Coastlands mall across Rimu Rd. Existing buildings are shown in white.

Toyworld Paraparaumu had closed, but Coastlands Mall, who were part of the town centre's planning and whose property would be represented within the model, joined in their place. Volunteer Kāpiti provided a worker to help with administration on the project. Lead consultants on the town centre's project, Beca, provided support by producing layout plans. The Council hired Vanessa Crowe, a contractor with a speciality in design and managing art installations, to help deliver the workshops, assist with promotion and graphics, and curate the content generated.

The workshops were held at the Kāpiti Community Centre and the Paraparaumu Library, both of which were within the area to be depicted by the display. Each meeting brought more than 20 builders and their parents. The session started with a brief presentation. Topics were:

- How the town centre had changed over the last 40 years and why.
- How facilities might change in the future as a result of new technologies like self-driving cars, 3D-printing and automation of jobs, and because of pressures like the aging population and climate change.
- What makes a vibrant and sustainable town centre, and how different people and groups have to co-operate effectively to make one.

The sessions were also used to allocate jobs, refine the layout design and work on improving the models. For example, two builders who were building parts of a stream within their respective areas were able to co-ordinate their models, so the sections of the stream would line up with each other. Other improvements offered to builders through the sessions were providing battery-powered LED light units to build into models, and the creation of custom stickers to use as 'signwriting'.

While some of the instruction and discussion was beyond the understanding of younger builders, their parents who were with them were able to participate and gain a greater appreciation of the issues.

The sessions also included free-play with Lego® and a show and tell section for builders to explain their creations and seek feedback. All material from the workshops including photos of works in progress and other instructions and information were put on a dedicated blogsite.

As well as individual builders, two classes from Paekākāriki School came on board to contribute to the project within their class time. It also inspired the school to run their own model-building project for students, inviting them to build their own vision of the future using recycled materials.

As the final display was assembled before the Show, the builders had a photo taken with their model, holding a card with their names, their age in 2035 and their thoughts on what 2035 will be like (See Figure 8). These were also shown alongside the display with posters of 'what to look for' highlighting and explaining parts of the display, and other background information on the project.



Figure 8: Lego® builders proudly showing their models and aspirations for the future

The final display involved sixty builders contributing nearly 200 individual models. It included a playground, museum, marae, sports hall, underground car park, solar energy, eco-site, a motorised self-driving tram, new shops, and electric vehicle charging. A 'Sustainability Show' was part of the model, as the Kāpiti Primary School field where it is held is within the town centre. This included food sellers, entertainment and landscape gardens. Council services highlighted included 'exotic' animal control, public toilets, the library, the civic building (which was motorised with Lego® robotics to open and close) and an underground section within a cut-out in the display case that showed water pipes and other usually unseen infrastructure (see Figure 9).



Figure 9: Council processes revealed: underground and within the Civic Building

After the Show on 21-22 March 2015, the installation was reassembled at Coastlands Mall, where

it remained from 23 March to 20 April 2015, with the Council's Long Term Plan consultation running alongside it (See Figure 10). Philips provided additional lighting.

Feedback on the Lego® Town Centre

Participants rated the experience as 'excellent' overall and the majority said they had learnt something about building techniques, sustainability, town planning and the work of the Council as a result. All said they would like to participate again. Coastland's management estimated over 200,000 visited the mall while the Lego® eco-town was on show. Comments from visitors who had seen it included:

- *"Really great concept doing it out of Lego® rather than other mediums, came from Whitby just to see the display."*
- *"Really like that you included the Marae."*
- *"Like the PV Technology, hopes we become more sustainable. Liked the water, really good to show kids what's happening under our roads."*
- *"Liked the flying cars, well done."*
- *"Wonderful for children. Great that KCDC could do this incredibly impressed."*
- *"Like that local kids helped build it and they were given awards."*

Kāpiti Coast District Council received an award from the International Association for Public Participation (IAP2) for the Kāpiti Town Centre's and Connector's Transformation Project, which the Lego® Town Centre display was part of.

The Encouragement Award was presented jointly to Council and Beca, consultant on the project, in recognition of excellence in the field of public participation; demonstrated through the development and implementation of an outstanding project. Judges said:

"This project clearly went beyond what was statutory and has successfully brought the community along in visioning their town's future. The Lego® Town was a great technique to work with all ages and to share the messages/vision to the whole community. Highly visual and interactive techniques were used and the all ages, co-building aspect of Lego® Town was an excellent visual addition. The Kāpiti Coast District Council engaged citizens in a meaningful way that went beyond its normal public participation practice; and got a better plan as a result."

DISCUSSION

Lego® has been used for creating the collective visions of a community before. For example, the Danish-Icelandic artist Olafur Eliasson created 'The cubic structural evolution project' (2004) that invites visitors to the installation (which has toured art galleries across NZ in recent years) to build and rebuild whatever they felt like out of a pool of white Lego®. The Council's projects differ in providing something that is not as purely abstract, organic or chaotic, but instead used planning, compromise and co-operation. Those coming later to Eliasson's installation were free to demolish any work of earlier builders (which over long periods does indeed occur in towns and cities), whereas for the Council's Lego® town projects, boundaries were respected.

The process that were followed and the people and organisations that were involved for these three council initiatives were crucial to their success:

- Builders freely gave their time and essentially lent the Council their models, because:
 - o They brought into the vision of the collaborative effort, and could feel personally proud of what everyone had achieved by working together.
 - o They received a clear framework to work within, and had access to guidance and advice if they needed it.

- They were rewarded in a number of ways, such as receiving some bricks, having the chance to win prizes, and were all publically acknowledged for their efforts.
- The Council provided a rigorous system for ensuring their models were protected from damage and theft and would be returned complete to their owners.
- The involvement of children along with the themes of fun and creativity, combined with a community purpose, helped obtain the support of important sponsors and contributors, such as Coastlands, Kāpiti College and Menzshed.
- Adult Lego® fans at the Council and in the community were able to lend their time and skills to help other less experienced builders and create the larger and more 'specific' models needed.
- Council's need to promote its work provided a focus for the effort.
- Council also provided the necessary budget to pay for materials, co-ordination and other expenses, that could not be obtained as donations. Such a budget would otherwise have been spent on more conventional forms of engagement and promotion.



Figure 10: The completed 'Paraparaumu 2035' display at the 2015 Sustainable Home and Garden Show

The co-ordination of the first and third projects required good communication via a number of channels to ensure the builders were fully informed of what they had to do. This was done via email, website, Facebook and in some cases phone calls.

As you would expect with any voluntary initiative, not all those who initially expressed interest followed through and built a model. Such 'no-shows' created gaps in the town layouts. Conversely, some builders were keen to build additional models. By putting these extras on a 'wait-list', it was relatively easy to fill the gaps.

In the 2015 town centre display, involving builders in defining the detailed layout of the town had limited success. Having already bought into the overall vision that was proposed by the organisers, they were happy to have the plot shapes and 'land uses' defined by the organisers, as they had been for the 2014 eco-town. They had the choice of what part of the display they personally would work on to try out their ideas.

CONCLUSION

Lego® has many natural advantages for public participation, which the Council successfully utilised in innovative ways in support of its work. Using Lego® creates interest and excitement among people that might not otherwise engage with 'dry' subject matter, and works well in depicting and explaining transport projects and sustainable planning and design principles. Furthermore the process of building Lego® exhibits can be part as much a part of public engagement as the exhibits themselves. The overall viability of the projects relied on a particular combination of factors, not least a genuine community purpose that all involved could support.

ACKNOWLEDGEMENTS

As well as the Lego® builders, the author would like to acknowledge Council staff and contractors that supported the projects including Vanessa Crowe, Dave McIntyre, Nathan Mourie, Jenny Gutry, Monique Leith, Sean Mallon, Philip Stroud and Marg Sweetman. From other agencies: Steve and Mandi Carmine (Toyworld), Nicky Hughes-Richards (Coastlands), John Robinson, Peter Blackler and Nigel Clough (Kapiti Menzshed), Ken McDonald (Philips), Mason Packer and Dylan Thomas (Kāpiti College), Nathan Baker (Beca), Tim Kindell (Stones Electrical), Christine Pollock (Volunteer Kāpiti), Andrew Metge (GHD) and Professor Brenda Vale (Victoria University of Wellington School of Architecture).

References

HERMAN, S (2012). *A Million Little Bricks: The Unofficial Illustrated History of the Lego® Phenomenon*, Skyhorse Publishing, Delaware.

Wikipedia (n.d.). *The Lego® Group*, viewed 19 December 2016
https://en.wikipedia.org/wiki/The_Lego®_Group

Help Us Build a Lego®® Town (n.d.). *Further information on the projects in this paper*
<http://ecotownbuildingcomp.com>

YouTube (n.d.). *How to Use Kāpiti Road's New Cycle Hook Turn*, viewed 21 December 2016
<https://www.youtube.com/watch?v=5k1CG0h8CMs&list=PLMkbFqbC0LfDiDln18jZ>

Kāpiti Coast District Council (n.d.). *Town centres and connectors project*, viewed 21 December 2016
<http://www.kapiticoast.govt.nz/Your-Council/Projects/Town-Centres-Transformation/>

Auckland Art Gallery Toi O Tāmaki (n.d.) *Olafur Eliasson: The cubic structural evolution project*, viewed 16 December 2016
<http://www.aucklandartgallery.com/whats-on/exhibition/olafur-eliasson-the-cubic-structural-evolution-project>