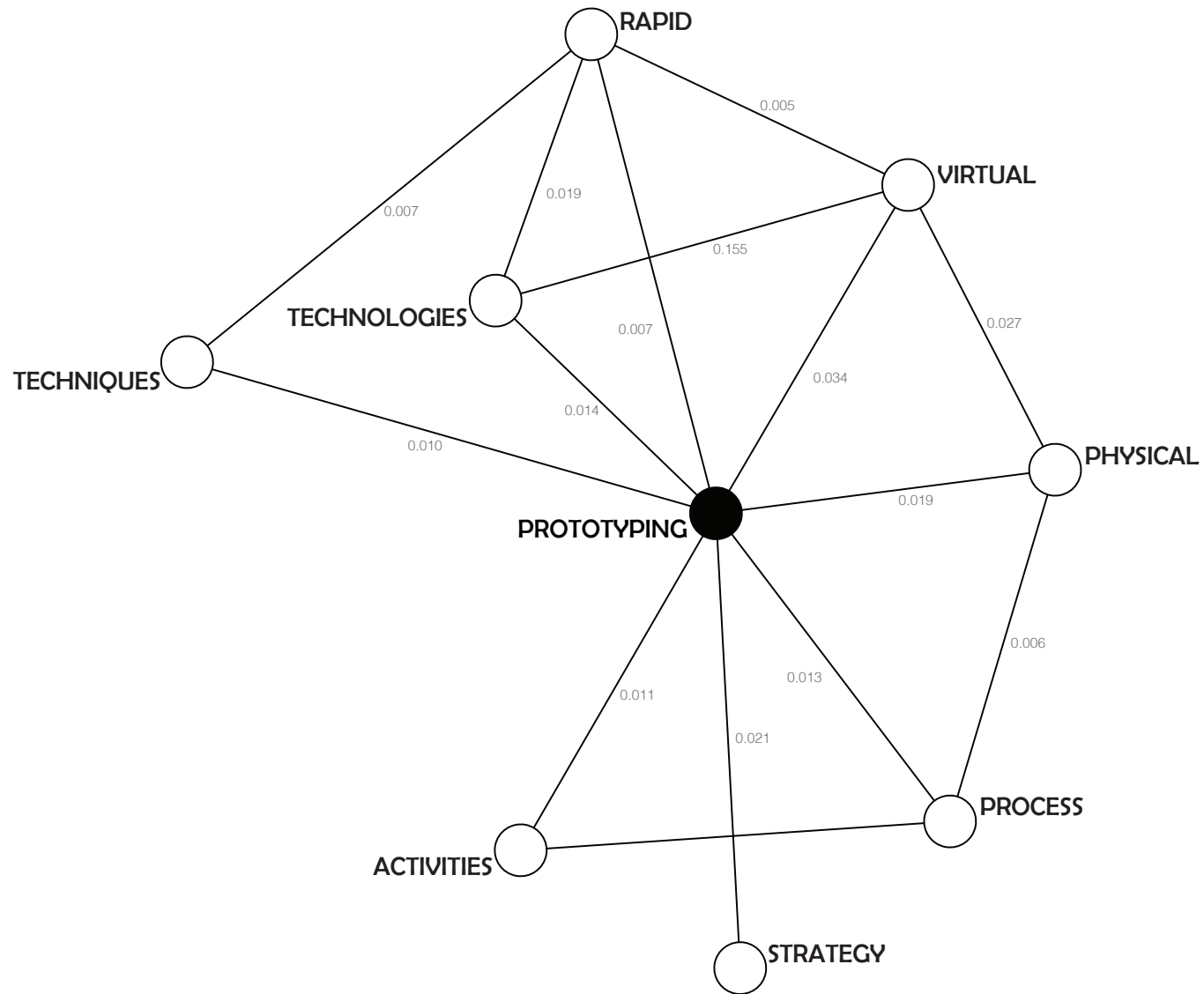


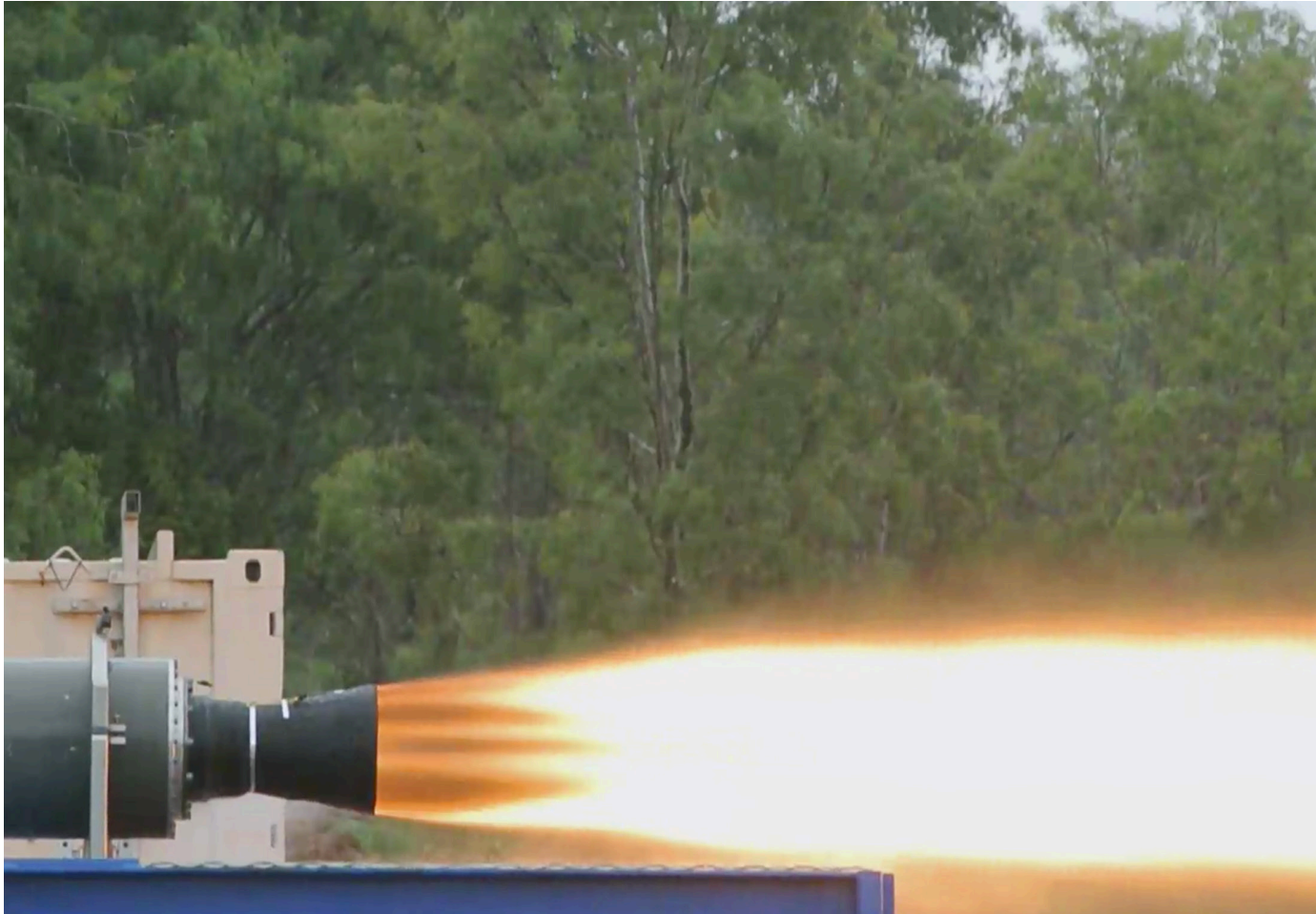
Bradley A. Camburn

Portfolio, 2018: Design Prototyping - Selected works



Knowledge Map

Representation of key skills and strategies in design prototyping, automatically generated using a mapping algorithm. Source is a prototyping literature database.

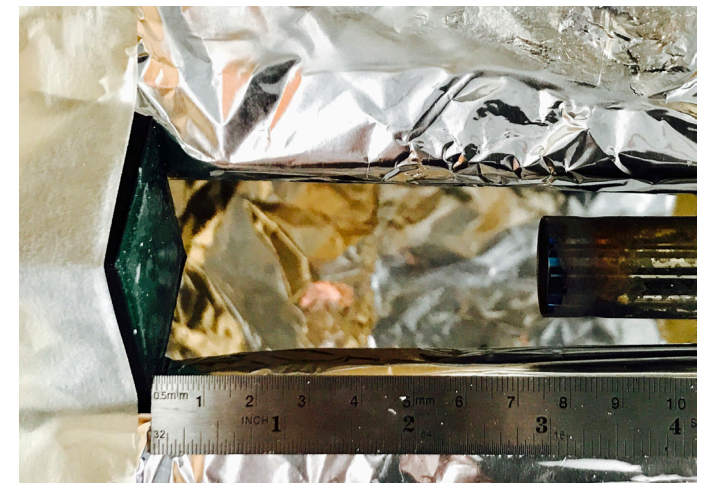


Jump Start for Aussie Space

Gilmour Space Technologies is the first space launch organization in Australia. The engine, pictured-right, was developed with the smallest team to ever produce an orbital class engine. This was achieved with strategic implementation of low cost design prototypes.

I was the most senior design lead from founding through to current, 100M \$ AUD valuation. I managed numerous creative, and funding efforts over the last 3 years.

(top-left) *70kN thrust, orbital launch class engine test*
(bottom-right) *centimeter scale combustion prototype*





Empowerment by Design

Secret Moon is an enterprise that emerged from a series of ethnographic design studies and co-design workshops for the design of a re-usable sanitary pad in rural Papua New Guinea. Christine Kumbungan maintains the initiative by training girls to make and sell re-usable sanitary pads.

I led ethnographic studies with local citizens, conducted collaborative workshops and produced the first design which is now the template used in the social-product.

(top-left) *local participants interviewed to support prototyping*
 (bottom-right) *final-stage production of Secret Moon sanitary pad*





MOST MEMORIALS



ARE BUILT BY
A FEW.



THIS ONE
IS BUILT BY



AN ENTIRE NATION.



Singapore Founders' Memorial

A series of design workshops were conducted for the Singapore Ministry of Culture Community and Youth, to extract a concept for the narrative defining Singapore's upcoming national founders memorial. Participants built designs to express their vision of Singapore's founding.

I architected and led a series of workshops for hundreds of Singaporeans. I also created a simplified design process model and prototyping kits to enable innovation.

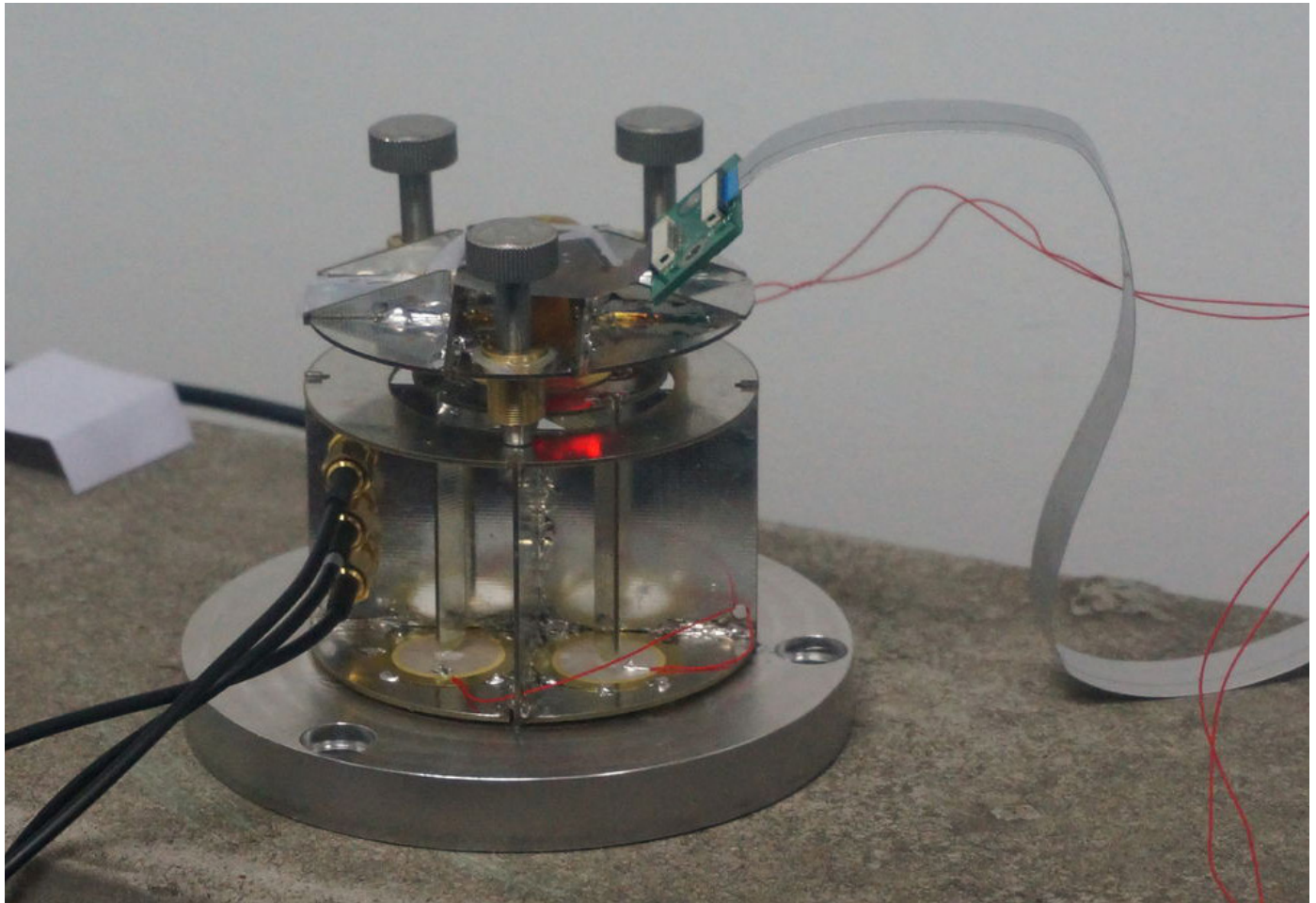
(bottom-left) *snapshot of the Sg founders memorial homepage*
(top-right) *design innovation cards, used to guide the workshops*


Atomic Vision for High Schools


The LEGO2NANO workshops in Beijing are sponsored by LEGO as a mechanism to design an atomic force microscope accessible to high schools. Guided by a design centric approach, high school students fed ideas to post-doctoral scientists who prototyped a working model.

I organized all design activities and workshop events in order to ensure that high-school students needs were met and guided the scientists through low cost prototyping.

(bottom-left) *students prototyping microscope interactions*
(top-right) *final microscope with nanometer resolution*








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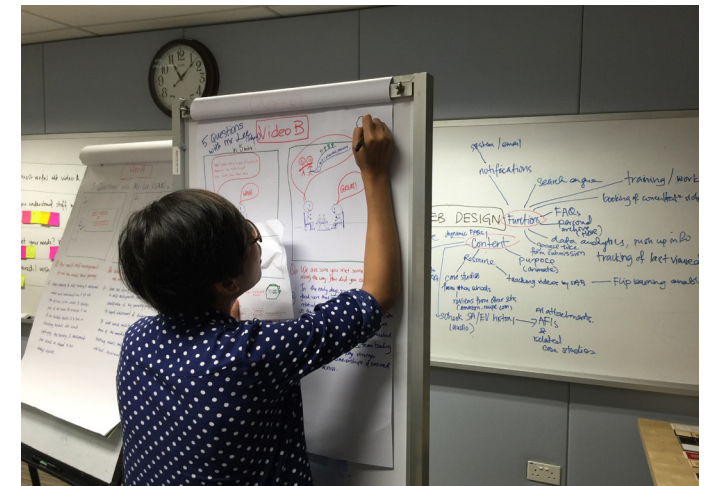


Madam Ong
Vice-Principal
Assessment Manager

River Secondary School
Year of Last Submission: 2011
Next Submission Due: 2016

Unassigned
Assigned
Complete

Criterion 1	Criterion 2	Criterion 3	Criterion 4	Criterion 5
Leadership	Strategic Planning	Staff Management	Resource Management	Student-Focused Processes
1.1 1.2 1.3	2.1	3.1 3.2 3.3 3.4	4.1 4.2 4.3	5.1 5.2 5.3 5.4



School Excellence Model

The Singapore Ministry of Education SEM portal is used to assess and rank all primary and secondary education centers in Singapore. A design-centric process was employed to innovate mechanisms for less fortunate schools to adopt best practices of top-ranked institutes.

I designed a new brand and web platform. I also ran workshops with active user engagement for MOE administrators to see the limits of the current system.

(bottom-left) *concept prototype in user studies for web design*
(top-right) *snapshot of a co-design workshop*



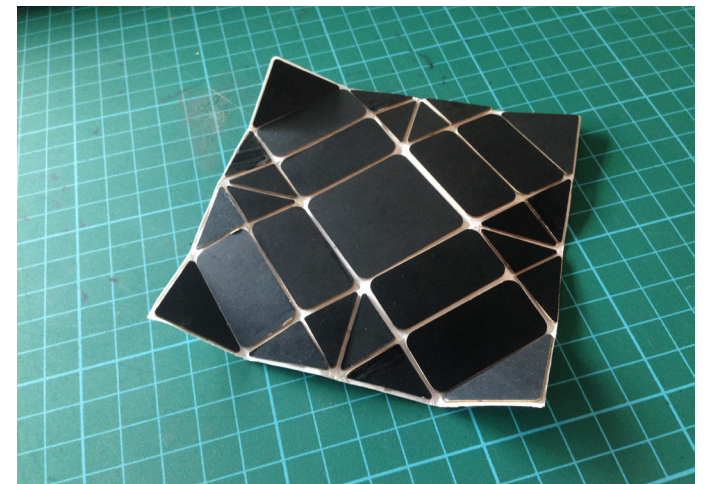
Tectonic Origami Structures

To commemorate the contributions of actor Jackie Chan to the Singapore University of Technology and Design in the form of two historic architectural pavilions, a new class of flat-packing transforming structures were designed to bridge traditional and digital methods.

I designed and hand-crafted the tectonic origami folding bag. I also patented this technology which is now to be used in a series of commercial hand-bags.

(top-left) *tectonic origami collapsible hand-bag*

(bottom-right) *conceptual paper prototype*

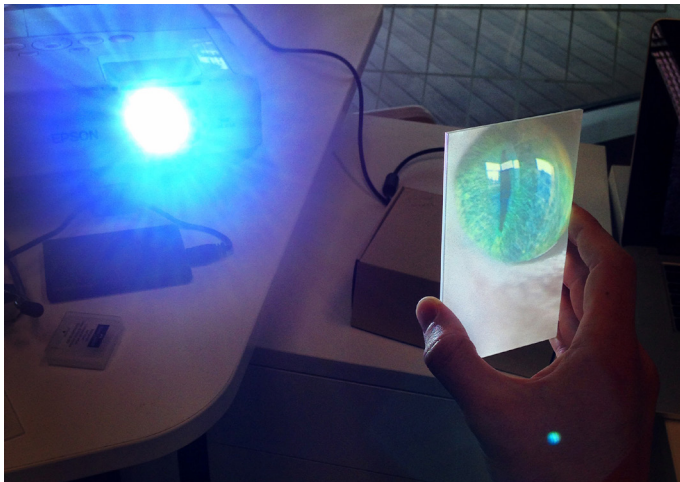


Space Flight Academy

The Space Flight Academy in Gold Coast, Australia is based on astronaut training activities at NASA's Johnson Space Center in Texas. Depicted is a reusable launch vehicle simulator. Projection mapping and real-time motion control enable an immersive user experience.

I designed the concept architecture as well as the detail design for several of the simulators, zero-g wall climb, RLV, Rigel capsule through to the opening of the camp.

(bottom-left) *function-material prototype of the image mapping*
(top-right) *full-scale production simulator*





Waste-Free B2B Packaging

A Singaporean logistics startup spun-off from the recently sold Goodpack, a manufacturer of Intermediate Bulk Containers (IBC) for shipping, will supply innovative modular crates to reduce millions of kilograms of waste material each year.

I designed the product architecture, and invented a new form of conformal modular packing (1 part type, 10^{857} configurations). est. 30 million units will be produced.

(top-left) *prototype modular divider*,
(bottom-right) *rendering of the first production run design*



Past Clients:

