

MADE To Experience

A new museum is turning people on to democracy.

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ONLY A FEW YEARS AGO a museum without exhibits would be no museum at all. But with the help of professional AV and expertly authored multimedia, the new Museum of Australian Democracy at Eureka (MADE) in Ballarat immerses visitors in the power of music, images, history and words, largely without resorting to the use of traditional exhibits and objects.

Dug into the original site of the Eureka Stockade – to many, a holy pilgrimage site for Australian democracy – MADE is made to be *experienced*. It's not a large museum but in a relatively small footprint, hundreds of documents can be viewed and many hours of footage can be accessed. Democracy is most definitely in action at MADE.

Thylacine was anointed the museum designers, while Mental Media was brought in as the media consultant to prepare the brief and tender documents for the client, Lateral Projects. Interactive Controls won the hardware tender while the software spoils were shared between Lightwell and Mental Media itself.



TIMELINE

The main exhibition is ringed by a cyclorama timeline that puts Eureka in the context of 3000 years of democracy. The timeline starts in Ancient Greece in 500BC and travels through events like the French Revolution (1788), the Universal Declaration of Human Rights (1948), the 1950s Civil Rights movement and the 2011 Arab Spring. It ends with changing projections of current happenings and includes a Twitter feed, via a front projection (using a NEC PA500UG).

EUREKA TOUCH TABLES

The centrally located touch tables explore the events surrounding the Eureka Stockade in 1854 when gold miners fought against taxes with the cry of 'no taxation without representation'. The touch tables bring to life the Eureka events with Lightwell's 2D animations. Pictures, articles, handwritten diaries and other information can be electronically explored as visitors expand, move around and drill down into the many moving components of the tables.

Michael Hill, Lightwell: We came up with the collaged approach, which uses the media in a more interesting way than is traditional. People can look at the history and see some of the actual documents that relate to the affair using all the usual multitouch gestures.

The story is in a series of chapters. The screens are in pairs or solo if the story requires it – six PCs address 10 screens. The PCs run off Linux; the content was developed in C++ and Open Frameworks for Linux; and displayed on MultiTouch MT420 screens.

The brief from the client was to keep it very visual – they didn't want it to be too laden with text. On the final screen, visitors can enter their own views about what Eureka means to them today and upload it to Twitter. The Twitter feed is then continuously updated on the final touchscreen. The feed is moderated by machine and by staff. We've managed to filter out all [known] swear words as a starting point. Then the comment is uploaded after staff take a quick look.

AV: Touch has come a long way in the last few years. What does MultiTouch bring to the party, as a touchscreen pioneer, that others can't?

Michael Hill: Its product stands out because it still has the narrowest bezel of all the screens going around. Most have a big frame, which makes dragging content around between screens more clunky. Plus Multitouch now has hybrid tracking. Traditionally, tracking has always been done with infrared. With hybrid tracking, every second frame is used to take an optical image rather than IR image, and it's looking at the shadows the fingers are casting. So it means in changing light and high light circumstances, they're a lot more sensitive than previous versions. So MultiTouch is being spec'd heavily in high brightness environments.

THE POWER OF NUMBERS

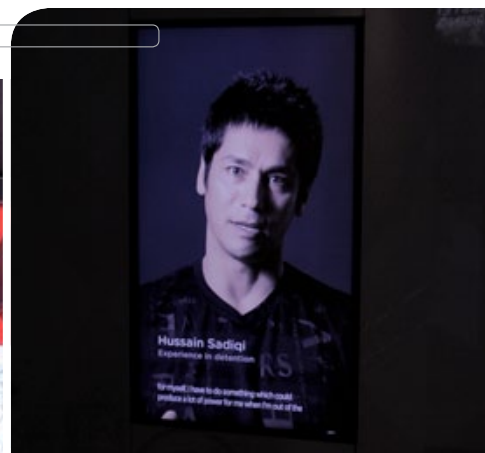
The force of numbers is felt in the portal that features four music ‘stands’. When the first stand is occupied one voice starts singing a protest song and a picture of a protester appears on the wall. These expand to pictures of hundreds of people in mass movements when all four stands are occupied.

Back in the machine room a multi-channel media player handles the four separate channels. Pressure pads under the floor go to the Medialon control system. The control system determines what to do with each pressure sensor and then plays the song. It also triggers an associated luminaire via a Dyalite control system. Bose Freespace in-ceiling speakers and a sub take care of the audio.



TOOLS OF CHANGE

Tools of Change videos feature interviews with those who have worked in grassroots activism and formal politics. They give practical and insightful advice on the best way to get your voice heard – be they former Federal Green’s leader Bob Brown or GetUp director Sam McLean. A portrait-oriented Samsung 40-inch DE40A displays the linear (not ‘on demand’) hi-def imagery streaming from a Medialon server via Gefen HDMI extenders. A Dakota Audio directional in-ceiling speaker deals with the audio.



RACK ROOM

The cerebral cortex of MADE lies within three racks of computers. The MultiTouch PCs use Linux. A phalanx of Windows PCs – two taking care of the Democracy Karaoke, and one each for the portrait screens – provide the HD video via Gefen HDMI extenders. Two machines running Linux take care of the Words Beacon display. A Medialon Showmaster system does all the show-related control – powering up of a morn and powering down of an evening.

With so many Netgear switches, with their associated plug packs, Interactive Controls boss Dean Stevenson decided to use consolidated Cindi 5V power supplies.

All of the rackmounted PCs use RAID (Redundant Array of Independent Drives) arrays of SSDs (Solid-State Drives) for mass storage. Dean Stevenson: “You can’t hot swap the RAIDed SSD drives but you can shut the machine down, pull the drive out, put a new drive in and it will automatically rebuild the

RAID. So effectively there’s a level of built-in redundancy. Traditionally, in a job like this, one of the most common failures is in the hard drives, so it’s good to have that layer of redundancy.

“For the last year and a half we’ve been building machines for Watchout with SSDs in them. If we get a failure it’ll be in our normal burn-in phase. There are a limited number of writes you can perform with an SSD but even if you write continuously it’ll still last a few years. And the performance benefits far outweigh the inconvenience of replacing the drives. The biggest factor for video is access time – getting to that data; not necessarily how much data you can access, but how quickly you can get it. SSD access times are minimal compared to a regular HD.

“We run a VNC viewer, which allows us to remotely investigate any system issue. For example, we can view the temperature the MultiTouch tables are running at, the lamp hours on the projectors, etc.”



INCENDIARY BOOKS

A library of Incendiary Books makes us think about a controversial collection of volumes that changed the world – from *Harry Potter* and the *Diary of Anne Frank* to *Silent Spring* and the *Qur’an*.

The interface, developed by Mental Media, allows the viewer to swipe through the selection and touch on a book spine to view a short blurb. Selected books pack a full transcript or a blog. A 40-inch Samsung 400TS-3 touch display has been framed to present a square image.



WITHOUT POWER

What does it mean to be without power? One way to make visitors feel this is with the Discrimination Machine [no, not another name for Pauline Hanson – Ed] that uses facial recognition software to read visitors' features and then randomly discriminates against them on the basis of age, gender and so on. The Samsung 400TS-3 touchscreen has a web cam mounted above it, interfacing with the facial recognition software. The software doesn't need to be bleeding-edge perfect, in fact the more insulting it is to your age or even your gender, the more likely you are to be outraged – the desired result, after all.

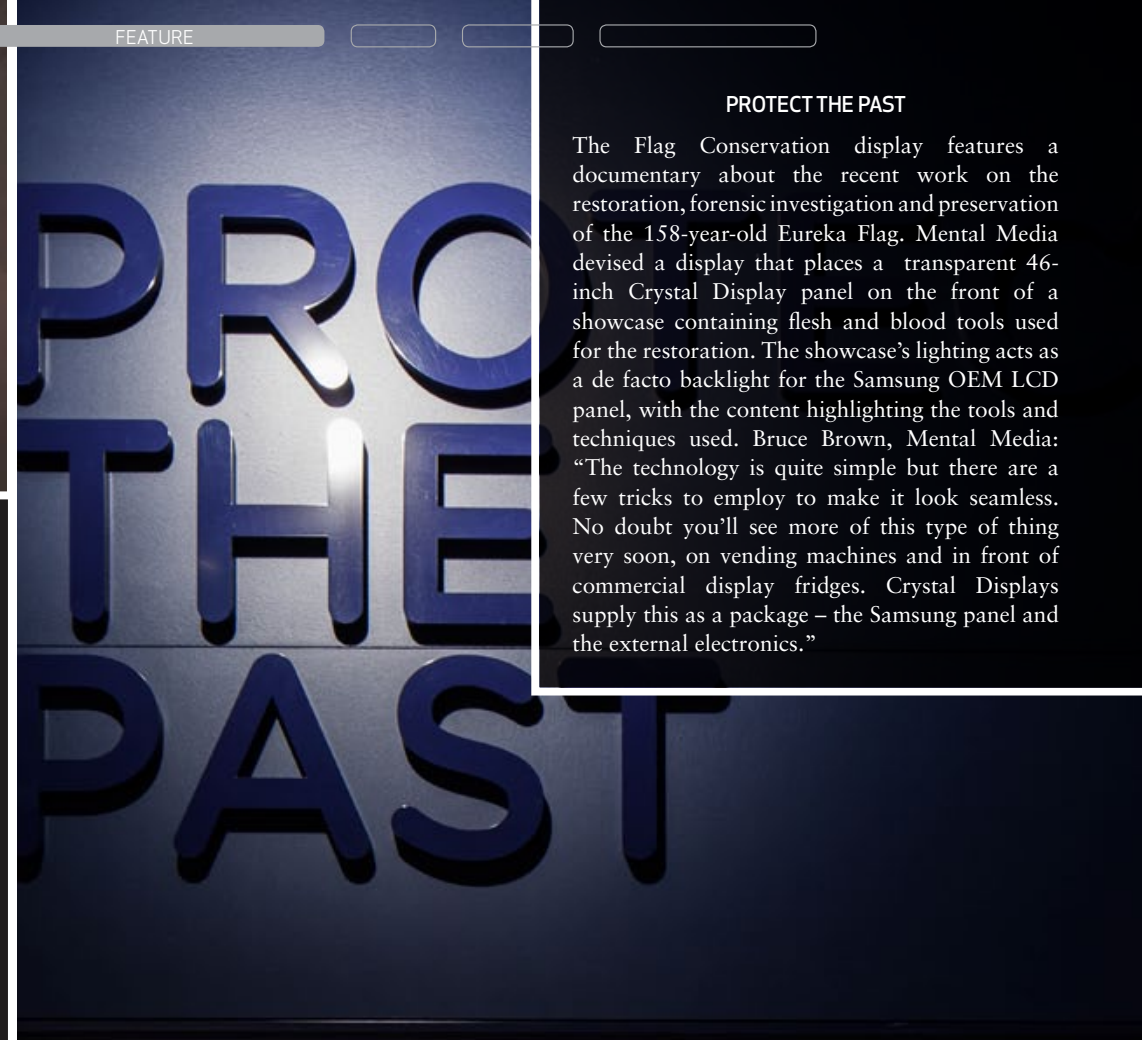
On each side of the machine are historic artefacts and screens with first person accounts of what it means to be denied rights, displayed on portrait-oriented Samsung DE40A panels with more focussed Dakota Audio directional speakers, which are set to the lowest volume possible to reduce the level of the general ambient hub-bub.

THE POWER OF SYMBOLS

The Flag of the Southern Cross (Eureka Flag) has returned to the site of the Eureka Stockade like a holy relic. In the darkened, purpose-built gallery, visitors can reflect on what this fragile 4 x 2.6m symbol means to them. A piped ambient soundscape plays discreetly in the background to mask noise leaking through from the main floor of the museum.

PROTECT THE PAST

The Flag Conservation display features a documentary about the recent work on the restoration, forensic investigation and preservation of the 158-year-old Eureka Flag. Mental Media devised a display that places a transparent 46-inch Crystal Display panel on the front of a showcase containing flesh and blood tools used for the restoration. The showcase's lighting acts as a de facto backlight for the Samsung OEM LCD panel, with the content highlighting the tools and techniques used. Bruce Brown, Mental Media: "The technology is quite simple but there are a few tricks to employ to make it look seamless. No doubt you'll see more of this type of thing very soon, on vending machines and in front of commercial display fridges. Crystal Displays supply this as a package – the Samsung panel and the external electronics."





THE POWER OF INFLUENCE

The Science of Influence features a consumer behavioural psychologist exploring the myriad ways in which we are influenced. A bearded Adam Ferrier (you'll remember him from *The Gruen Transfer*) takes care of the presentation.

The Mental Media interface uses a periodic table-style matrix, allowing viewers to click on the various techniques of influence such as Commitment or Priming. Again, a framed-off 40-inch Samsung 400TS-3 touch display is deployed, running the recorded presentations off a Medialon media server. A Dakota Audio directional speaker overhead provides the sound for those standing in the sweet spot.

DEMOCRACY KARAOKE

A good-looking, well-spec'd auditorium provides the perfect location for school groups to reconvene, or as a public lecture theatre. ProAV Solutions installed the AV elements into the space.

A big attraction is the Democracy Karaoke, where visitors can stand at the lectern and present a famous speech rolling on the autocue. The presentation will be recorded, replayed and even emailed to you if desired.

The auditorium has some AMX control (to toggle between presentation and karaoke mode) and is built to accommodate outside broadcast.

THE POWER OF WORDS

In the Power of Words, designed by Lightwell, the sound and patterns of the electronic words of 12 great speeches – by the likes of Martin Luther King Jr., Nelson Mandela and Eureka Stockade leader Peter Lalor – flow around visitors in a darkened portal.

Four ProjectionDesign units (3 x F22s for the walls and a ceiling-mounted F32 for the floor) combine with two infrared sensor cameras to pull off the effect. As many as three peoples' movements can be tracked. If you've seen the novelty projection effect of stamping on a projected fishpond (or similar) and seeing the ripples and fish scattering, The Power of Words takes a similar approach.

Mental Media's Bruce Brown pointed out something interesting about the use of screens in such a darkened nook: "We're projecting black and white text so there's no need for a white screen or a high-gain screen. In fact, doing that would actually be detrimental – it would reflect light all over the space. So it's better to project onto a dark screen in this case."

VOTING-IN DEMOCRACY

Democracy is hardly the vibiest subject going around and something rarely appreciated by most of us until it's taken away. And here lies the problem with getting teenagers to switch off their iDevices long enough to think about what democracy actually means. Allowing school groups to touch, swipe, pinch, hear, expand and generally *experience* the attributes and advocates of democracy makes the task a whole lot easier. Truth be told, adults will benefit greatly from the museum as well. Although at \$12 an adult ticket, they may find they're preaching to the converted. 🐣

MORE INFORMATION

MADE: www.made.org
 Thylacine: www.thylacine.com.au
 Mental Media (Software): www.mentalmedia.com.au
 Lightwell (Software): www.lightwell.com.au
 Interactive Controls (Hardware, Medialon):
www.interactivecontrols.com.au
 ProAV Solutions (Auditorium Install):
www.proavsolutions.com.au