

**Supplementary  
Submission  
No 137a**

**INQUIRY INTO GOVERNMENT'S MANAGEMENT OF THE  
POWERHOUSE MUSEUM AND OTHER MUSEUMS AND  
CULTURAL PROJECTS IN NEW SOUTH WALES**

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## Select committee on the government's management of the Powerhouse Museum and other museum and cultural projects in new NSW

Submissions from Kylie Winkworth, museum and heritage expert; and Molino Stewart, Flood Risk and Review, Assessment for the Proposed new Parramatta Powerhouse

This submission addresses Terms of Reference

1. (a) the proposed move of the Museum of Applied Arts and Sciences, the Powerhouse Museum, from Ultimo to Parramatta, including:
  - (ii) the governance of the project, including the effectiveness and adequacy of planning,
  - (iii) the risks in the move, including damage to collections,
  - (iv) **the consequences of flood at the site at Parramatta in light of the flood event in February 2020**

The particular focus of this submission concerns flood risk issues arising from the selection of the Phillip St site on the banks of the Parramatta River for a public museum, and consequent flood risks to people and the collection from the proposed development.

### 1 Background

Museum experts in the Powerhouse Museum Alliance are deeply concerned about the selection of the Phillip St/ DJs car park site on the banks of the Parramatta River for the relocated Powerhouse Museum, and the winning competition design. In our view the scheme presents serious risks to visitors and the museum's collection. These risks have been down played, misunderstood or ignored by those with carriage of the project.

A short recap of what led to this decision follows.

- In November 2014 the *State Infrastructure Strategy Update* advises that the government should *urgently consider* relocation of the Powerhouse Museum to Parramatta, declaring that the PHM is *relatively remote* and not on any cultural ribbon.<sup>1</sup>
- A week later Premier Mike Baird announces the Powerhouse Museum is moving to Parramatta.
- In December 2014 the MAAS director Rose Hiscock reported to the MAAS Trust that the Secretary of Trade and Investment Mark Paterson advised that the government was committed to implementing the recommendation from INSW that the PHM be moved to Parramatta.
- The relocation would be funded by the sale of the PHM's land and building at Ultimo, then estimated at \$130m-\$200m. No additional funds would be provided.
- In February 2015 Liz Ann Macgregor, the Premier's cultural ambassador to Western Sydney, says the Powerhouse is the 'obvious' candidate to move to Parramatta...claiming 'It's not rocket science to see what needs to be done'.<sup>2</sup>
- At a follow up meeting with the MAAS Trust on 4 March 2015 the Secretary advised that the museum's assets were owned by the Government, and it was not appropriate for the museum to have a role in the sale of its site.<sup>3</sup>

- May 2015 Root Projects is engaged to prepare a Review of Site Attributes and a Strategic Appraisal Framework with Cox Architects. This report was to include preliminary floor space and volume estimates, and a QS report on estimated construction costs.
- It is not known if it advised ‘do not build the museum on flood prone land’. These reports have not been made public.
- July 2015 Root Projects provides a briefing to the MAAS Trust on its *Site options and strategic appraisal framework*.
- In September 2015 the Cabinet Infrastructure Committee settled on an assessment of just two site options, the Mays Hill golf club in Parramatta Park and the DJs carpark site owned by Parramatta Council.
- September 2015 KPMG leads a consortium of consultants on a business plan, with INSW coordinating, and Urbis advising on the planning and site assessment. KPMG prepared a paper on project risks. These papers have not been released.
- In November 2015 AEA consultants deliver a *Vision for MAAS at Parramatta* report. This has not been released.
- In November 2015 MAAS director Rose Hiscock resigns, just two years into a five year contract.
- In December 2015 the MAAS Trust minutes note under the Parramatta Update that the total square metre envelop for the two sites under consideration is smaller than the PHM.
- December 2015 Liz Ann Macgregor says the Powerhouse is a victim of bad planning and needs a rethink.
- January 2016 Parramatta councillors say the PHM should not be moved to the DJs carpark.
- April 2016 Arts Minister Troy Grant announces the PHM will be moved to the DJs carpark site.
- Acting director Dolla Merrillees is announced as the new director of MAAS.
- June 2016 the Legislative Council announces an inquiry into museums and galleries in NSW, including the move of the Powerhouse.<sup>4</sup>

It is difficult to understand how any prudent government could select a flood prone riverbank as the site for a new museum, let alone for a project that is now described as the largest cultural infrastructure investment since the Sydney Opera House.

The risk to people and the collection from regular flood events on the Parramatta site has been raised repeatedly with premiers, ministers and the government’s consultants on the business case and most recently in the EIS consultations. These concerns have been rebuffed.

The Powerhouse Museum Alliance is so concerned about the flood risks to visitors and the museum’s collections it has commissioned Molino Stewart to provide us and the Inquiry with expert independent analysis of the business case papers and plans, and advice on flood risk issues. Their report is attached to this submission.<sup>5</sup>

Molino Stewart are leading consultants in flood plain risk management and planning, with particular experience advising on flood planning issues in the Parramatta CBD and the Parramatta River catchment. Notably their report concurs with concerns previously expressed by

the eminent river hydrologist and flood expert Dr John Mackintosh in his submission to the first Legislative Council museum Inquiry, where he explained that locating a museum on this site represented a potential risk to life and the collections.<sup>6</sup>

## 2 Powerhouse Precinct Site

The site for the new museum is on the southern bank of the Parramatta River, bound by Wilde Ave, Phillip St, and Dirrabarri Lane, which is an identified overland flow path draining from the Parramatta CBD. The riverside boundary of roughly 100m extends from Wilde Ave to the Lennox Bridge at Church St, including a 20m wide strip of riverfront land in front of the Meriton Suites.

Molino Stewart note in their report that the museum site may experience overland flood depths of up to 0.5m as frequently as every year.<sup>7</sup> A flood depth of 30cm is considered enough to sweep people away.

About a third of the museum site is designated as high risk. Parramatta Council says of the high risk flood zone *that frequent flooding is common, the area will see the fastest flowing and deepest water that may be more than 4m in depth and cause a significant risk to life.*<sup>8</sup>

The purpose of the Powerhouse Precinct Parramatta is to attract high numbers of visitors to the facility. The Stage 2 Design Brief says the facility will operate 24x7, it will host multiple events at any one time for up to 10,000 people, of all ages and abilities, throughout the building and on the riverside.<sup>9</sup> It is claimed the facility will attract 2 million visitors a year.

In pushing on with this development that is a high flood risk for a public museum, aiming for 2 million visitors a year, the NSW Government is deliberately putting people and the Powerhouse collections at known risk.

## 3 Flood Levels, Risks and Planning

3.1 From the outset the whole question of flood risk on this site has been viewed as a **building design issue not a matter of public safety and the appropriateness of choosing to build a major community/ education building in a high risk flood zone. Nor has the safety of the collection been considered.**

3.2 The ground floor for the Parramatta development is at RL 7.5, considered to be above a 1:100 ARI flood event. People buying lottery tickets with a one in a hundred chance of winning would consider that was a likely prospect. More extreme weather events are increasing as the climate warms. A senior SES official has warned that a super cell event over the Parramatta CBD could inundate the area in just nine minutes.<sup>10</sup> Under this scenario it is difficult to see how the museum could manage thousands of visitors spread across two porous buildings, open terraces, an undercroft and riverbank, with just nine minutes notice. We saw what this means in the searing footage of the supercell flash flood in Toowoomba and Grantham.

3.3 Dr John Macintosh notes in his submission to the previous inquiry, *standard contemporary practice uses the assessed line of inundation of the PMF (Probable Maximum Flood) to demarcate the extent of flood hazard. That is, the location must be sited outside the PMF flood extents to avoid flood hazard.*<sup>11</sup> In other words, the use of a 100 year ARI as a guide to siting or planning a public museum is wrong in terms of visitor safety and the collections. The PMF on the site 11.3.

3.4 The Stage 2 Design Brief for the Parramatta development specified that *the majority of Presentation Spaces should be designed to be above the overland PMF (RL 11.3) to ensure they are suitable for display of some Museum Collection items.*<sup>12</sup> Nevertheless Presentation space 1, the major exhibition space designated for the museum's large objects, is on the ground floor of the eastern building. The level is just 7.5. These objects could not be relocated in a flood event.

3.5 It is very concerning that MAAS and its consultants are now claiming that the museum's collection can be displayed in the P1 space on the ground floor. The MAAS CEO said in budget estimates that all the museum objects will be above the 1:100 year flood.<sup>13</sup> That is not the relevant measure as 1:100 years is a high probability of a flood, and represents a high risk to the collection, especially for large objects that cannot be moved at short notice. The same claim that the collection will be safe at the level of 1:100 ARI has also been made during the EIS consultations. It is not acceptable that any of the museum's objects should be displayed at levels below the PMF RL 11.3.

3.6 Parramatta Council's Floodplain Risk Management Policy requires that developments with high sensitivity to flood risk (e.g. "critical" and "sensitive" land uses) are sited and designed to provide reliable access and minimise risk from flooding - **in general this would not be anywhere within the extent of the Probable Maximum Flood.**<sup>14</sup> Sensitive uses and facilities include community and education facilities, which covers museums. Therefore a museum development should not be located in an area subject to risk from a PMF which covers the whole Phillip St site.

3.7 Parramatta Council's Development Control Plan 2011 has some specific objectives and design principles that would prohibit the development of a museum on the site. Under 2.4.2.1 Flooding, one objective is to *prevent any intensification of the development and use of High Flood Risk Precinct or floodways...* The museum site is an intensive development in a high flood risk precinct.

3.8 Parramatta Council's Design Principles for the DCP include: *P.1 New development should not result in any increased risk to human life.* Obviously locating a high visitation public museum operating 24x7 with events for up to 10,000 in a high risk flood zone does increase the risk to human life. Table 2.4.2.1.2 in the Flood Plain Matrix Planning and Development Controls clearly shows that 'sensitive uses and facilities' such as a public museum constitute an unsuitable land use.

3.9 The Powerhouse Precinct has been designated as a state significant development, meaning it does not have to comply with Parramatta Council's Development Control Plan and other planning policies. The EIS will be assessed by the Department of Planning and the project will inevitably be approved by the Minister for Planning. This means the government is the applicant, the manager of the EIS process, the assessor of the EIS and

the consent authority. It is very important that the Select Committee gives careful consideration to the flood risk issues to people and the museum's collection. These matters have not been explored in the business case papers, or in the EIS process which is focussed on the building design; and there is obviously confusion at senior levels within MAAS about what level constitutes a safe place for the display of the collection.

#### 4 Parramatta Flood Event 9 February 9 2020

Molino Stewart report that the 9 February 2020 flood of the Parramatta River saw the river rise to a level of 4.5 AHD at the site of the proposed museum. <sup>15</sup>

A flood of the same extent would mean the stilts of the western building on the north elevation would be in the floodwaters. At this level flood water and debris would flow through the building's undercroft, which is at RL 3.5, to a depth of about 1m.

The 9 February flood was 1m below a 20 year ARI flood. This level of flooding is something that could occur much more frequently than a flood with a 20 year average recurrence interval, possibly as frequently as every five to ten years.



Parramatta River flood looking toward the museum site, 9 February 2020



Silt deposited by the 9 February flood on the Powerhouse Precinct land



The aftermath of the flood at the Charles St Wharf. The comment on this image from the Parramatta Police Area Command posted on February 10 2020 was: Debris exposed as floodwater recedes. This highlights the lethality of flash floods. Stay well away as there is little chance of survival if caught in this.

The February 9 flood attracted many onlookers using vantage points to see the water and flood debris rushing by. <sup>16</sup> The Powerhouse Precinct and its terrace will be a place for flood watching.

Key observations arising from the 9 February flood event include:

- Floods are a mesmerising spectacle and they attract onlookers
- Similar flood events will be common, and could be expected perhaps every five to ten years. Smaller floods that would still inundate the undercroft of the museum building could occur every few years.

- The porous design of the facility, open on all sides, and its long frontage to the river increases the risk to the community interested to use the museum and its access to the riverside as a flood watching platform.
- The museum will carry a high responsibility and increased maintenance and security costs to ensure visitor safety on the site.
- The Civic Way running between the two buildings is designed to carry visitors to the river's edge.
- It is likely the museum would have to be closed during a flood event, but it is not clear how or if access and public risk could be managed around the open spaces.
- Every flood event will mean high clean up and maintenance costs from silt and debris left behind.
- The water-saturated riverbank and undercroft will increase humidity in the porous museum buildings and put the collections at risk.

## 5 Flood Risks for People and the Collection

The folly of selecting the flood prone Phillip St/ DJs carpark site for the museum is imposing major costs, risks, constraints and functionality compromises in the design of the facility. These include:

- Closure of the museum and cancellation of major events in response to flood warnings
- Clean up and maintenance costs for the public domain and undercroft from near annual floods, including the 100m strip of land between Wilde Ave and the Lennox Bridge
- Increased security and risk management costs to ensure public safety across two porous buildings, open terraces, and an undercroft, with the facility operating 24x7 for up to 10,000 people
- The flexible mesh around the undercroft will trap debris
- High humidity levels in the building from the regular floods, and the decision to make the building porous, with open terraces on multiple levels
- The north facing glass walls will exacerbate humidity and temperature variations in the building
- With a porous building in a high humidity, flood-exposed location it is doubtful the climate control systems will be able to meet the temperature and humidity parameters for international museum standard environmental controls
- Energy use will be high to control environmental conditions in what may well be a glasshouse
- The fact that there is no basement carpark, deleted for cost reasons related to the flood issues
- It is ridiculous to imagine that a high intensity public venue aiming for 2 million visitors, with multiple events across the building, high rotation exhibitions, concerts, cinemas and conferences, a cooking school, 10 cafes, and 40 apartments can all be serviced and supplied with not one on-site car space.

It is ludicrous that this pair of ungainly boxes on stilts is supposed to be the bigger and better replacement for the real Powerhouse Museum at Ultimo with its 20,000sqm of international museum standard exhibition spaces, purpose designed for the PHM's large



objects, its co-located, state of the art collection facilities, ample parking for contractors and just a short walk from Central Station.

It is not clear if the required Flood Emergency Management Plan (FEMP) will be able to mitigate and manage the flood risks to people on the site, especially if it comes after the EIS is approved when the building design is locked in. A preliminary view of the architectural plans and the EIS suggest the following issues may be problematic:

- The base of the western building facing the river will be regularly under floodwaters
- In the event of an overland flood, Civic Way, the central path between the two buildings, will be an overland flood path, potentially channelling high velocity flood waters from the CBD, cutting access between the two buildings
- The current plans show that the eastern building does not have a ramp or escalator to the upper level; only two lifts and stairs. This seems inadequate in a high visitation facility if there is an emergency.
- It is not clear how mobility impaired people, the elderly and parents with prams could evacuate to higher levels above the PMF in a major flood event, particularly in the eastern building
- The stairs leading from the Civic Way to the riverside would be the evacuation route in a flood, but would not be accessible for mobility impaired people and parents with prams
- The lift in the undercroft to the ground floor of the western building may not work in a flood
- There is a risk people could be trapped by rising floodwaters in the undercroft and not be able to escape
- The vulnerability of the museum's escalators and lifts in the event of a major flood could impact visitor safety and evacuation

The flood models relied on by the business case and EIS consultants are likely not up to date for the new normal of more extreme weather events. The siting and porous design of the buildings means visitors and the collection are highly exposed to flood risk. A major flood event, either overland, from the river, or both, may occur with little warning. There is no chance that large objects displayed in the P1 space could be moved if there was an imminent flood. An overland flood could rush through the ground floor and sweep objects from plinths. It is out of the question that this flood exposed space, which will not have international museum standard climate controls, can be used as a display venue for the PHM's large objects and significant collections.

After five and half years and more than \$40m spent on consultants it is staggering that fundamental issues around the risks to the public and the museum's collection have never been considered. The EIS is likely to kick the flood risk can down the road once again. Public confidence in the management of this project is sagging. Legitimate community and expert concerns about the safety and preservation of the PHM's collections cannot be dismissed. It is vital that the flood risks to visitors and the collection are assessed and resolved – and seen to be resolved - before the EIS is approved.

Kylie Winkworth

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<sup>1</sup> [http://www.infrastructure.nsw.gov.au/media/42966/inf\\_j14\\_871\\_sis\\_report\\_ch09\\_web\\_new.pdf](http://www.infrastructure.nsw.gov.au/media/42966/inf_j14_871_sis_report_ch09_web_new.pdf)

<sup>2</sup> Fair Go for the West, Daily Telegraph, 24 February 2015

<sup>3</sup> This is not correct. The PHM's land is owned by the MAAS Trust, not the NSW Government. Minutes of the MAAS Trust 4 March 2015 meeting obtained via GIPA. The minutes reveal the MAAS Trust is effectively ordered to comply with the Government's decision. It has no say in key issues around the future of the PHM and its relocation. Concerns about the cost of the move, the viability of the relocation, and the effect of the decision of the PHM's sponsors were rebuffed. No reference is made in any of the papers to the 2014 PHM masterplan, and request for infrastructure funds for investment in the Ultimo site, a request which was later cited in the business case as justification for the decision to move the PHM.

<sup>4</sup> For a digest of key moments and news on the PHM to Parramatta saga see

<https://powerhousemuseumalliance.com/find-out-more/a-news-chronology/>

<sup>5</sup> Molino Stewart, Flood Risk and Review Assessment, New Parramatta Powerhouse Museum, Stage 1, May 2020

<sup>6</sup> <https://www.parliament.nsw.gov.au/lcdocs/submissions/59449/0174%20Dr%20John%20Macintosh.pdf>

<sup>7</sup> Molino Stewart, Flood Risk and Review Assessment, New Parramatta Powerhouse Museum, Stage 1, May 2020, p.2.1, p.5

<sup>8</sup>

<sup>9</sup> Stage 2 Design Brief, p.128, 152, 182, 186 <https://maas.museum/new-powerhouse/competition-process/>

<sup>10</sup> <https://www.smh.com.au/national/nsw/nine-minutes-to-flee-parramatta-s-catastrophic-flash-flooding-warning-20190214-p50xtv.html>

<sup>11</sup> <https://www.parliament.nsw.gov.au/lcdocs/submissions/59449/0174%20Dr%20John%20Macintosh.pdf>

<sup>12</sup> Stage 2 Design Brief, p.249 <https://maas.museum/new-powerhouse/competition-process/>

<sup>13</sup> Hansard transcript p.6 <https://www.parliament.nsw.gov.au/lcdocs/transcripts/2319/Transcript%20-%203%20March%202020%20-%20UNCORRECTED%20-%20PC%201.pdf>

<sup>14</sup> Parramatta City Council Floodplain Risk Management Policy, 2014, 1.b.

<sup>15</sup> Molino Stewart, Flood Risk and Review Assessment, New Parramatta Powerhouse Museum, Stage 1, May 2020, p.5

<sup>16</sup> There were many clips and photos on social media.

<https://www.facebook.com/833404453/posts/10157864887589454/?d=n>