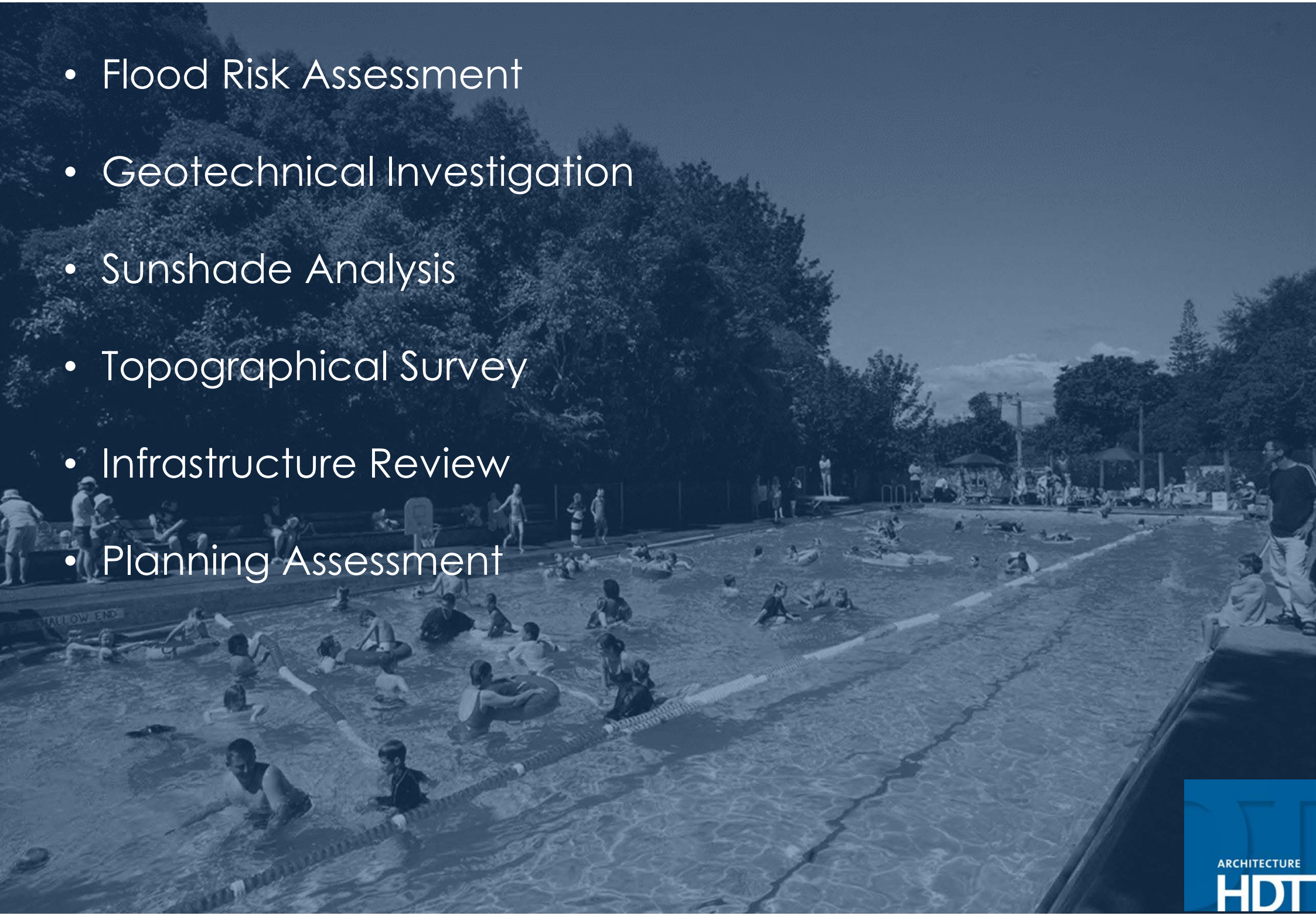
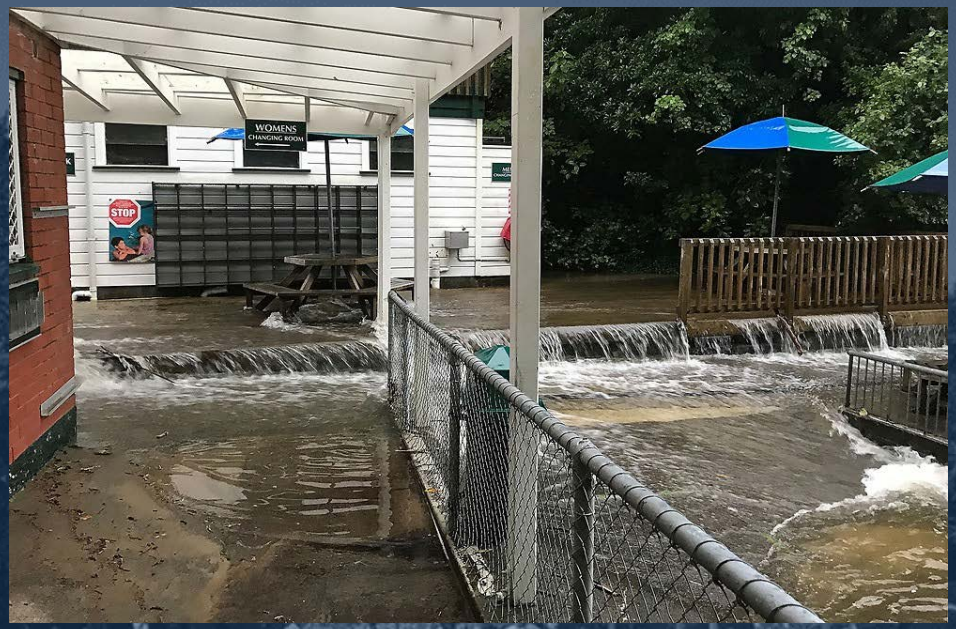
KHANDALLAH POOL SITE ASSESSMENT

ARCHITECTURE HDT| TONKIN AND TAYLOR |POWELL FENWICK I ADAMSON & SHAW


• Flood Risk Assessment
• Geotechnical Investigation
• Sunshade Analysis
• Topographical Survey
• Infrastructure Review
• Planning Assessment
ARCHITECTURE
HDT

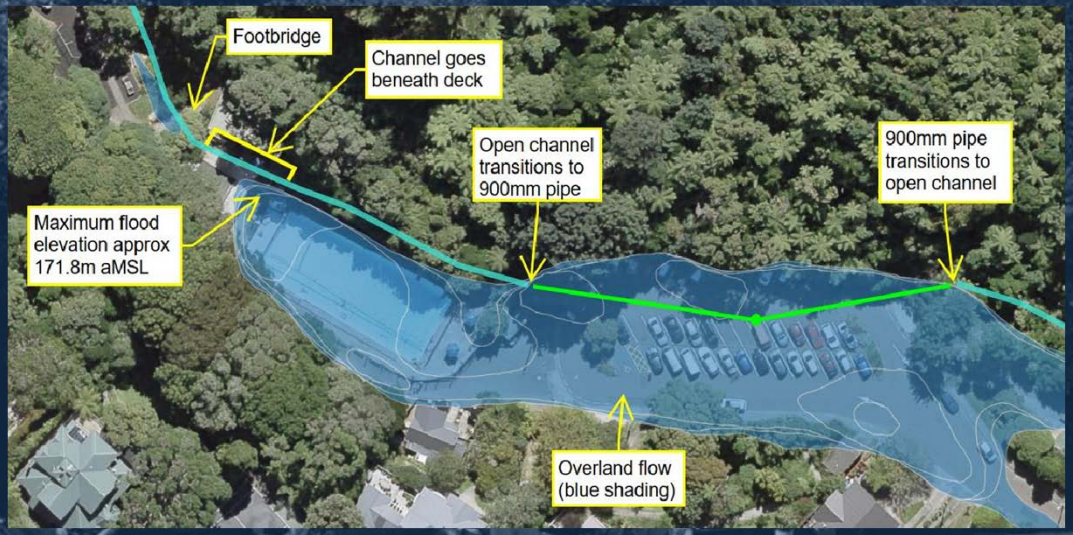
FLOOD RISK ASSESSMENT

- Site has historically been the source of flooding, with flooding events recorded in 2016, 2017 and 2021.
- Large catchment area (60 hectares) discharges across the site.
- Flood risk predicted to get worse with climate change bringing about increased frequency and severity of events.



FLOOD RISK ASSESSMENT

- Various flood risk scenarios investigated
  - Wellington Water modelling (10%AEP)
  - Wellington Water 1%AEP+20% rainfall



  - T&T 1%AEP +RCP 8.5 Climate Change Scenario

- **Allowance for future predicted events requires one of two approaches**
  - Remove obstruction to flood path by opening up park entrance and minismising obstruction, **or,**
  - Elevate building platform above predicted flood level and provide dedicated path for the dissipation of water.
  - Worst case flooding prediction requires elevation of concourse by 1.8 metres and dedicated flood path cross section of 20m2

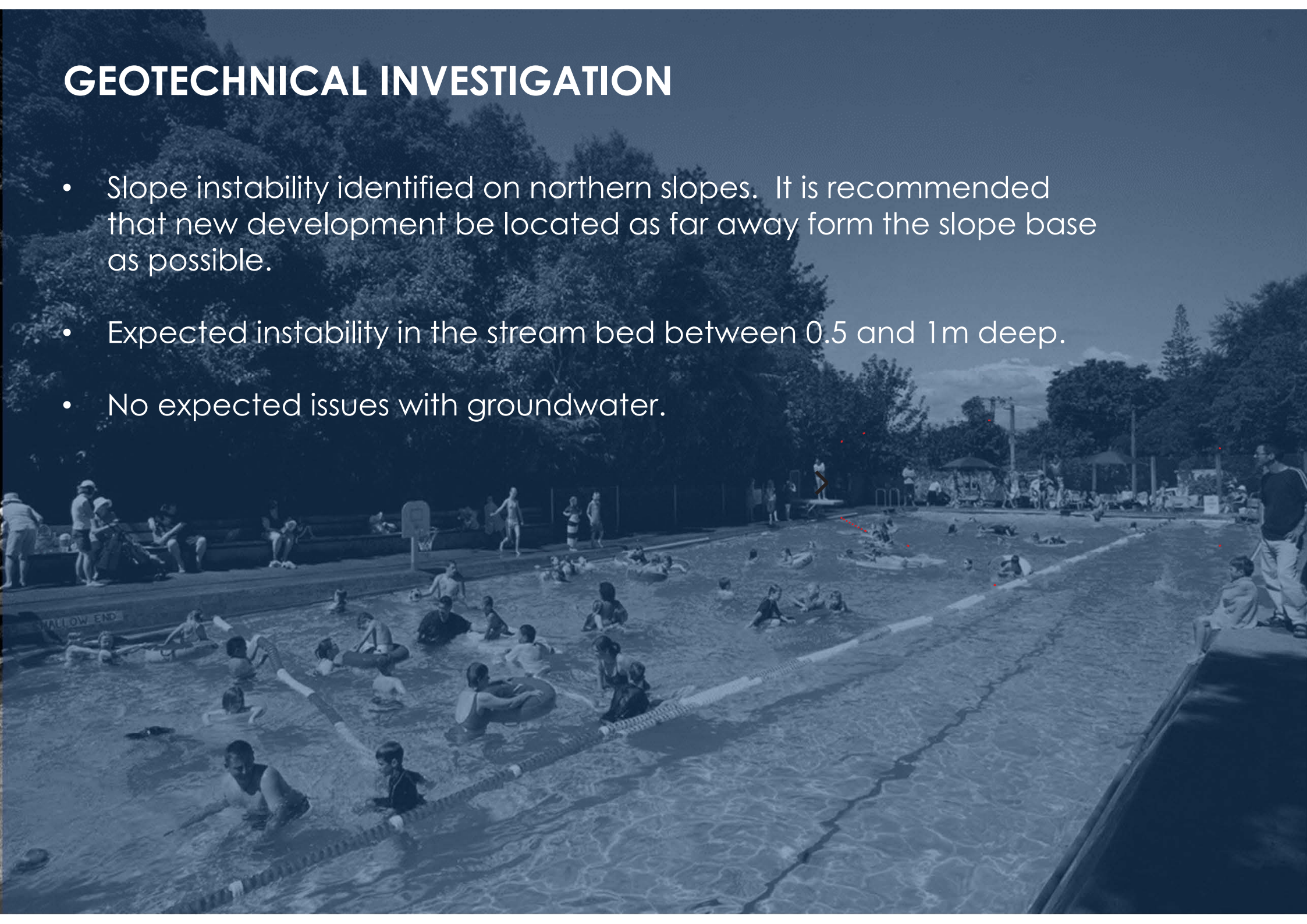
FLOOD RISK ASSESSMENT

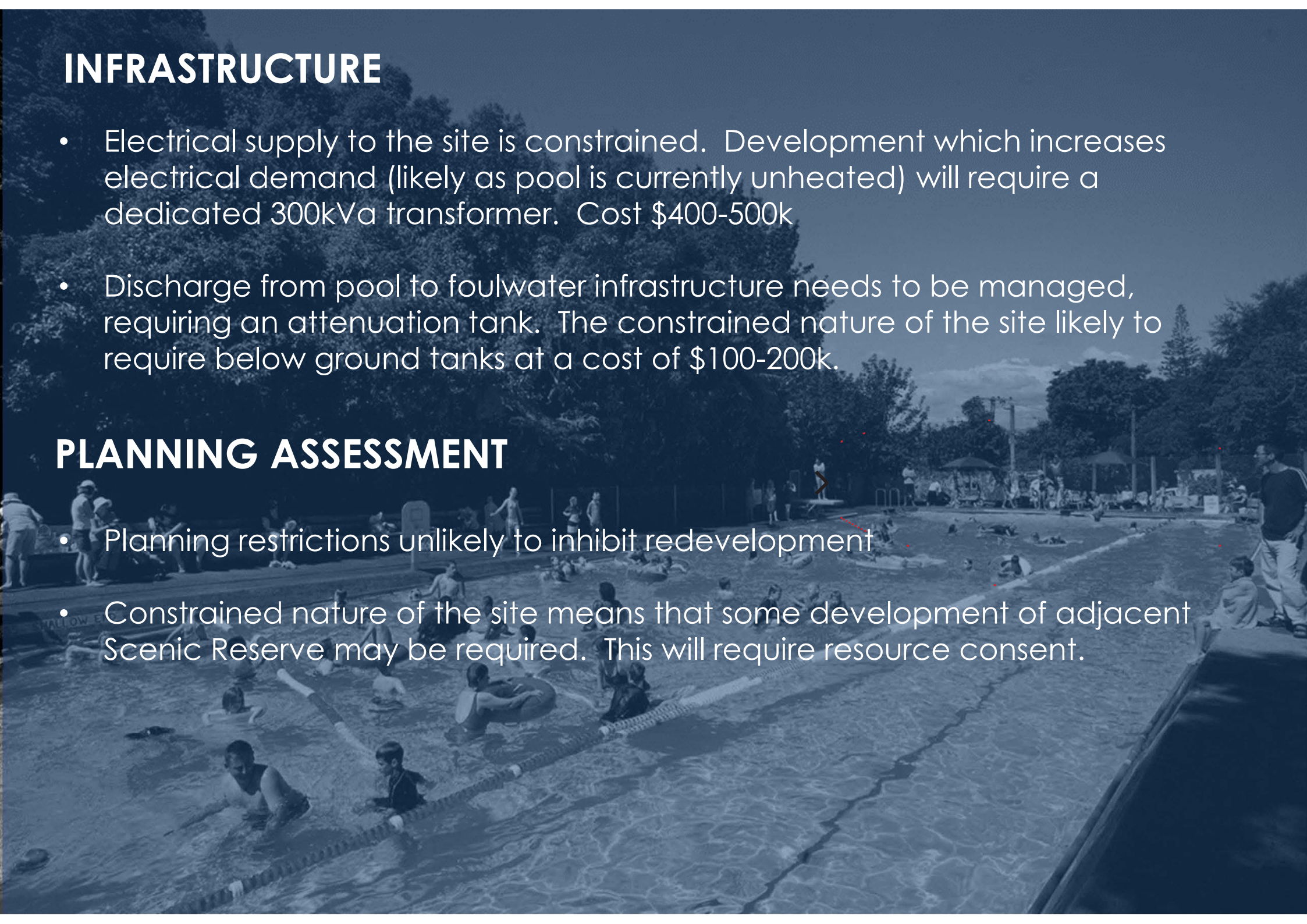
Elevating the concourse has a profound visual impact on the park entrance

Creates accessibility issues at the pool entrance.

GEOTECHNICAL INVESTIGATION

- Slope instability identified on northern slopes. It is recommended that new development be located as far away form the slope base as possible.
- Expected instability in the stream bed between 0.5 and 1m deep.
- No expected issues with groundwater.





INFRASTRUCTURE

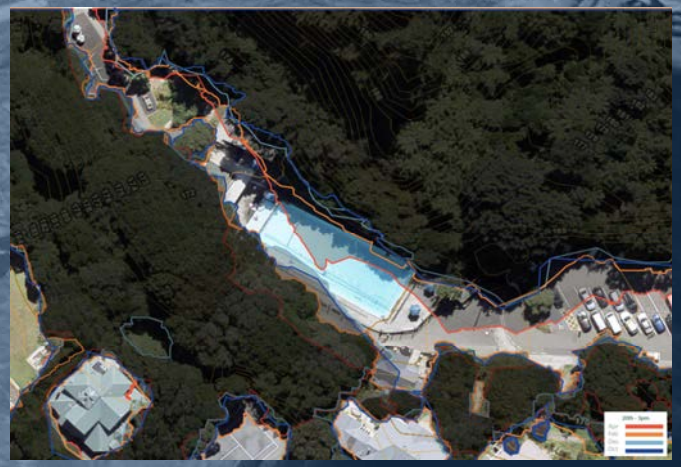
- Electrical supply to the site is constrained. Development which increases electrical demand (likely as pool is currently unheated) will require a dedicated 300kVa transformer. Cost $400-500k
- Discharge from pool to foulwater infrastructure needs to be managed, requiring an attenuation tank. The constrained nature of the site likely to require below ground tanks at a cost of $100-200k.

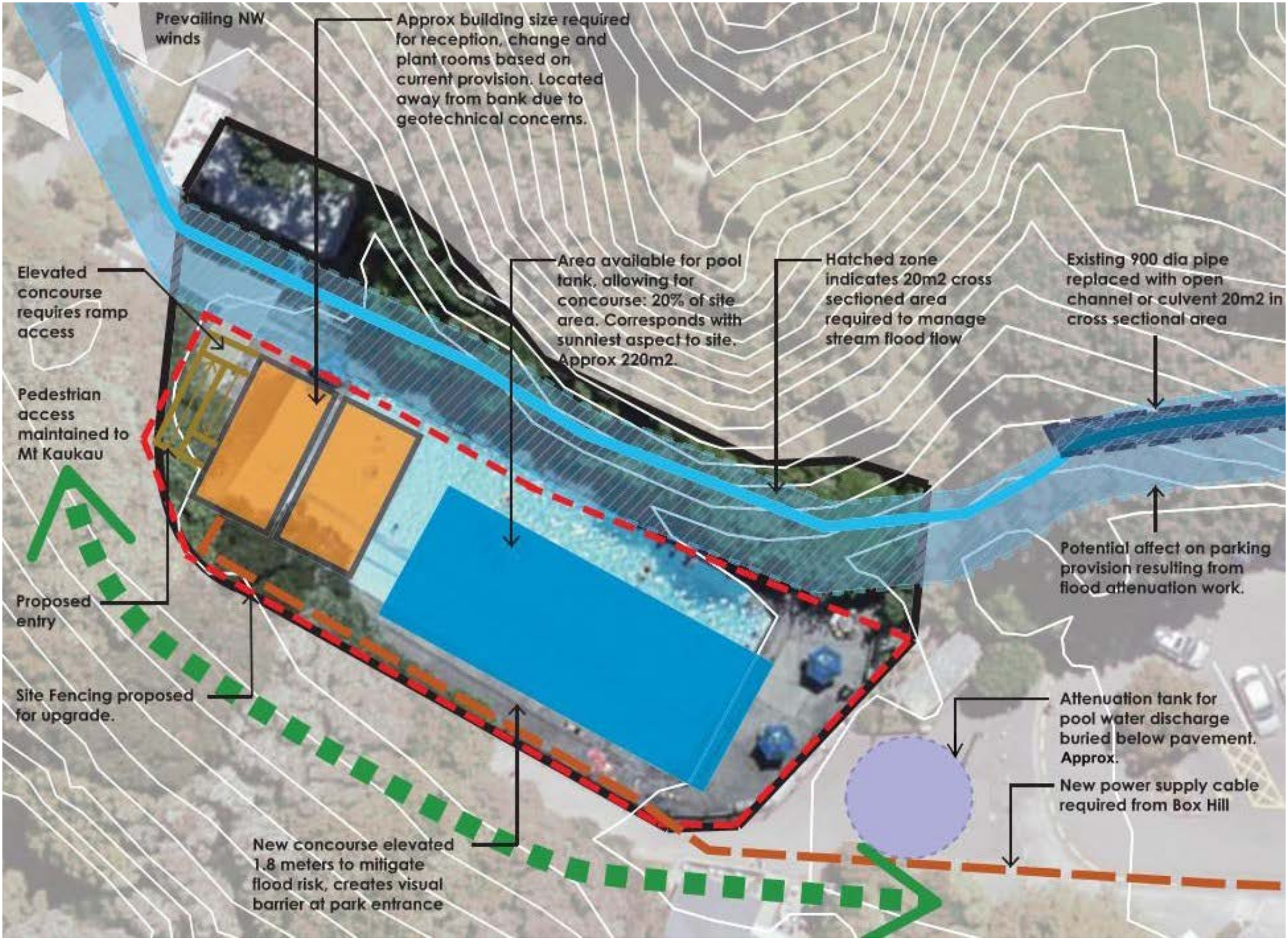
PLANNING ASSESSMENT

- Planning restrictions unlikely to inhibit redevelopment
- Constrained nature of the site means that some development of adjacent Scenic Reserve may be required. This will require resource consent.

SUN & WIND

- Significant overshading-south eastern corner of the site provide the most attractive and sunny points to develop.
- Valley funnels north-west wind. New development should consider wind screening and/or the location of buildings on the site to provide shelter.




Prevailing NW winds
Approx building size required for reception, change and plant rooms based on current provision. Located away from bank due to geotechnical concerns.
Elevated concourse requires ramp access
Area available for pool tank, allowing for concourse: 20% of site area. Corresponds with sunniest aspect to site. Approx 220m2.
Hatched zone indicates 20m2 cross sectioned area required to manage stream flood flow
Existing 900 dia pipe replaced with open channel or culvent 20m2 in cross sectional area
Pedestrian access maintained to Mt Kaukau
Potential affect on parking provision resulting from flood attenuation work.
Proposed entry
Site Fencing proposed for upgrade.
Attenuation tank for pool water discharge buried below pavement. Approx.
New power supply cable required from Box Hill
New concourse elevated 1.8 meters to mitigate flood risk, creates visual barrier at park entrance