PROPOSED REMOVAL OF MANGO TREES AND REPLANTING WITH ANOTHER SPECIES

HERITAGE IMPACT REPORT R5

CLIENT: DEPARTMENT OF EDUCATION

Program
Meeting on site with DES 30 March 11:30am
Draft application by 17 April 2020 COB
Lodgement by 15 May 2020 COB

JINX MILES: 1 April 2020
Contents

1 PROJECT OVERVIEW .................................................................................................................. 2
2 CULTURAL HERITAGE SIGNIFICANCE ..................................................................................... 3
  2.1 Conservation Management Plan ......................................................................................... 4
3 THE PROPOSED LANDSCAPE PLAN ....................................................................................... 5
4 RECORD OF MANGO SEASON 2019/2020 ........................................................................... 6
  4.1 Record of activities during the Christmas Break 2019/2020 ............................................. 7
  4.2 Photographs 2019/2020 fruiting period ........................................................................... 8
  4.3 Maintenance constraints .................................................................................................. 11
5 HEALTH OF TREES PROPOSED FOR REMOVAL ............................................................... 11
  5.1 Mango tree on front boundary near entrance gate ............................................................ 11
  5.2 Mango tree near hall ........................................................................................................ 12
6 OPTIONS .................................................................................................................................. 12
  6.1 Mango tree at entrance to school ...................................................................................... 12
  6.2 Mango tree near hall ........................................................................................................ 16
7 ASSESSMENT OF PRUDENT AND FEASIBLE ALTERNATIVES ........................................ 18
  7.1 Retain the mango tree at the entrance gate and remove the mango tree near the hall .... 18
  7.2 Move the main entrance .................................................................................................. 18
  7.3 Replace the mango tree near the entrance gate with another species and manage the leaf and fruit fall from the mango tree near the hall ................................................. 18
8 CONSULTATION ..................................................................................................................... 19
9 RECOMMENDATION .............................................................................................................. 19
10 APPENDICES ......................................................................................................................... 20
  10.1 Use of the hall during the school term (record provided by the School) ............................ 20
  10.2 Photographs as existing (14.02.2020) ............................................................................. 21
  10.3 Plan of hall ...................................................................................................................... 24
  10.4 Recommendations of the CMP ...................................................................................... 24
  10.5 Previous application for an exemption certificate for landscaping (approved except for removal of the mango trees) ................................................................. 26
  10.6 Attachments .................................................................................................................... 27
1 PROJECT OVERVIEW

This proposal is to remove two mango trees and replace with alternative species. Another two mango trees on the front boundary are proposed to be retained. The relationship of the trees to the heritage boundary is shown in the diagram below. For accurate locations of the trees refer to Catherine Brouwer Landscape Architects Plan Redland State School: Gordon Road Forecourt rejuvenation: Removals Plan 190508: June 2019 drawing LSK01 issue A.

Removal of the two mango trees was proposed as part of a landscaping scheme (Catherine Brouwer Landscape Architects Plan Redland State School: Gordon Road Forecourt rejuvenation) that was approved, except for the removal of these trees, under Exemption Certificate 201907-9124 EC dated 11 September 2019.

This plan is still the School’s preferred development option and is proposed to be carried out in the Christmas break of 2020/2021 if necessary approvals are obtained.

Further advice in the Exemption Certificate regarding the mango trees proposed for removal was as follows:

Under the Queensland Heritage Act 1992 exemption certificates can only be given for development that will have no more than a minimal detrimental impact on the cultural heritage significance of a place. The two Mangifera indica (mango) trees proposed to be removed and replaced in the application are identified in the Queensland Heritage Register entry (in the statements for cultural heritage criteria A and D, in the history and description sections and in the boundary map) as features of cultural heritage significance, and are noted for their shading and streetscape values, and their historic connection to surrounding agricultural industry. The trees are further recognised in the
Draft Conservation Management Plan as being of ‘considerable significance’, with views of the trees from Gordon Road being of ‘exceptional significance’ (Jinx Miles, March 2018). The removal and replacement of the two Mangifera indica (mango) trees has been assessed as having more than a minimal detrimental impact and cannot be approved under an exemption certificate application process.

The Queensland Department of Education can seek a recommendation from the Queensland Heritage Council by submitting a report under section 71 of the Queensland Heritage Act 1992. Further information about this Development by the State process is available at www.qld.gov.au/environment/land/heritage/development/state.

2 CULTURAL HERITAGE SIGNIFICANCE

Redland Bay State School is entered in the Queensland Heritage Register file no.601369. The statement of cultural heritage significance from the entry in the register is reproduced below:

Criterion A: The place is important in demonstrating the evolution or pattern of Queensland’s history.

Redland Bay State School, (established 1886) is important in demonstrating the evolution of state education and its associated architecture in Queensland.

The place retains early and rare representative examples of standard government designs that were architectural responses to prevailing government educational philosophies. The suburban site with mature trees, and other landscaping features demonstrates the importance of play and aesthetics in the education of children.

The Ferguson-designed Timber Teaching Building (Block B; 1886, extended and modified 1932) demonstrates an early standardised design that sought to address the practicality and comfort of school buildings; with later modifications that improved natural lighting and ventilation.

The Teachers Residence (1886, extended 1898, 1914) provides evidence of departmental policy to provide accommodation for married male head teachers as an inducement to teach in country areas and to provide a resident caretaker on the site.

Criterion B: The place demonstrates rare, uncommon or endangered aspects of Queensland’s cultural heritage.

The Teachers Residence at Redland Bay State School is a rare and important surviving example of a Ferguson-designed teachers residence, a building type that was once common in Queensland schools. Highly intact, it is one of six known examples of Ferguson residences surviving in Queensland.

Criterion D: The place is important in demonstrating the principal characteristics of a particular class of cultural places.

Redland Bay State School is important in demonstrating the principal characteristics of an early Queensland state school complex, comprising a pair of buildings designed by Robert Ferguson, located on a large landscaped site with mature trees and play areas.

The Teaching Building (Block B; 1886, extended 1932) is a good example of a standard Ferguson-designed timber school building with later alterations by the Department of Public Works and demonstrates the principal characteristics of its type. These include its lowest gable-roofed form with verandah; timber-framed and -clad construction; louvred gable end ventilation panels; vented coved
ceiling and alterations to improve natural lighting and ventilation including: verandah removed from the northeast elevation; and introduced banks of timber-framed casement windows.

The Teachers Residence (1886) is a rare, intact example of a Ferguson-designed timber residence with later extensions and alterations by the Department of Public Works (1898 and 1914). The Ferguson-designed section retains the principal characteristics of its type, including: its lowset, gable-roofed form; front verandah; original joinery and internal linings; rear kitchen with brick fireplace; and its L-shaped layout of rooms. The 1898 and 1914 additions are good examples of alterations that were commonly made to teachers residences to meet changing spatial and functional requirements, and include a dining verandah and bathroom enclosure (both 1914).

Criterion G: The place has a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.

Redland Bay State School has a strong and ongoing association with past and present pupils, parents, staff members, and the surrounding community through sustained use since its establishment in 1886. The place is important for its contribution to the educational development of Redland Bay, with generations of children taught at the school, and has served as a prominent venue for social interaction and community focus. Contributions to its operations have been made through repeated local volunteer action, donations, and an active Parents and Citizens Association.

The entry in the register includes the following description of the grounds:

Grounds and views

In 2018, the Teachers Residence and Block B remain nestled in their landscaped grounds. The open areas surrounding these buildings is revealed on approach from the school entrance on Gordon Road.

Elements of state-level cultural heritage significance also include:

- Mature trees in the landscaped open area adjoining Gordon Road, including camphor laurels (Cinnamomum camphora), mango trees (Mangifera, sp.), a fig tree (Ficus, sp.) and a date palm (Phoenix dactylifera).
- Views of mature trees along the Gordon Road boundary, which are a prominent feature of the streetscape.

Grounds elements not of state-level cultural heritage significance include: other buildings, structures and sheds; pathways; covered walkways; fences and gates; signage; and all other trees, vegetation and gardens not previously mentioned.

Non-significant features within the road reserve include: the footpath, road surface, kerb, and all other road infrastructure.

2.1 Conservation Management Plan

Redland Bay State School Heritage Conservation Management Plan (CMP) was prepared by Jinx Miles in May 2019 for the Department of Education and Training (version R5).

The CMP noted (p23): Records of planting of mango trees at Redland Bay State School have not been found, but mango trees were planted on Arbor Days at Wellington Point State School in 1890\(^1\) and at

\(^1\) Telegraph 4 August 1890 p2
The mango trees were assessed as being of ‘considerable’ significance for being characteristic of many Queensland schools and related to the agricultural history of the Redlands area. The mango trees on the front boundary of Redland Bay SS were also assessed as being significant for contributing to streetscape value. The view of the treed frontage of the school from the street was assessed as being of ‘exceptional’ significance. Aerial photographs suggest mature trees existed on the front boundary from 1955 without evidence of replanting.

The CMP contained further discussion about the mango trees (see appendix 8.4) and included the following policy:

<table>
<thead>
<tr>
<th>Policy 19. Conserve significant plantings and investigate alternative solutions where there are conflicts with functional requirements.</th>
<th>Landscaping which is detrimental to the heritage values of the school should be avoided until it can be integrated with master planning;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Short term planning for the area in front of the School should investigate options which allow the existing significant trees to be retained;</td>
</tr>
<tr>
<td></td>
<td>Landscape plans for the area around significant trees should be developed in consultation with an Arborist level 5;</td>
</tr>
<tr>
<td></td>
<td>Significant trees should be monitored and pruned for safety and improved health and management in accordance with the Australian Standard, they should not be lopped or pollarded;</td>
</tr>
<tr>
<td></td>
<td>A management strategy to remove as many mangoes as possible before the start of the school term should be adopted;</td>
</tr>
<tr>
<td></td>
<td>Infill planting on the front boundary should be ornamental trees not natives and will require heritage approval</td>
</tr>
</tbody>
</table>

3 THE PROPOSED LANDSCAPE PLAN

In accordance with the recommendations of the CMP a landscape plan was prepared by a landscape architect with heritage expertise and was approved by DES as Exemption Certificate 201907-9124 EC dated 11 September 2019. However proposed removal of the mango tree at the front gate and one near the hall was not approved as part of this exemption certificate. Refer to appendix 8.5 for the issues considered at the time this application was assessed.

Otherwise, the approved landscape plan provides an integrated approach that addresses other functional issues of the Gordon Street forecourt including:

- Presently 975 enrolled pupils and their parents arrive at the school each morning. Many of these students use the main gates. Moving the fence to provide a wider footpath opposite the steps leading up from the road to the main entrance and provision of a second entrance gate would reduce congestion at pick up and drop off.
- Provision of new shelters and more seats improves arrangements for parents waiting for children;
- Opening up the forecourt by removing non-significant shrubs and trees to be more similar the 1970s landscape provides more space inside the school gates.

---

2 Queenslander 6 May 1893 p822
3 Brisbane Courier 6 May 1895 p2
4 Telegraph 11 Jan 1909 p2 (reference supplied by Mary Howells)
Pathways have been rationalised and new trees proposed to be planted on the front fence line where original trees no longer survive. The mango trees to the north west of the main entrance and all the original camphor laurel trees are proposed to be retained.

4 RECORD OF MANGO SEASON 2019/2020

Although there is a problem throughout the year from leaf fall, the fruit falling during the mango season is a particular issue. This problem is of most concern at the main entrance to the school and at the entrance to the hall. The leaves also cause deterioration of the roof sheeting on the hall and block downpipes leading to roof leaks.

The Principal noted the following issues.

Continual drop of mangos in the period beginning in late November through to end of February

- Stairways unsafe near the hall
- Rotten and decaying mango creates a black stain on the paths which is slippery and needs to be removed to make safe
- Mango fall onto roof of hall is a maintenance issue, clogging downpipes and gutters – continual need to be removed to ensure water does not back up and create water damage in hall
- Stairways from front of school to the footpath slippery and unsafe
- Footpaths on council designated areas, including directly in front of pedestrian crossing slippery and unsafe
- Main entry into the school is a paved area - trip hazard and slip hazard for anyone using this area. As a result main gate had to be closed for a period of 2 weeks (2/12/19 – 13/12/19) due to unacceptable risk caused by mango fall.
- Reports of students and parent being hit by falling mangos
- Reports of parents/staff slipping on fallen mangos
- Decaying mangoes create a disgusting odour – fruit flies and vermin
- Unable to provide a clean and safe hire space around the hall during the vacation period as we have no staff on site to make safe/clean. One hirer actually had to send a crew of volunteers to clean and make safe the entry to the hall during the vacation period (18 January 2020)

Ongoing maintenance and clean up as a result of mango fall in the 2019/2020 season

- 2 – 13 December (10 days) 1 1/2 hrs per day – 15 hours
- 20 – 24 January (5 days) – 12 hours of cleaner and facilities officer time
- 28 January – 28 February (24 days) ½ hr per day – 12 hours

Continual leaf fall – all year round

- Ongoing issue with stairs near hall – slippery unsafe
- Ongoing issue with stairs at front of school – slippery unsafe

Limb fall – large branches fall and have had a near miss - (see photo 18/02/20)

Cancellations in the 2019/2020 season

Required to cancel 2 assemblies due the stairway which all students (975 students) must use to obtain access to the hall, being unsafe with the combination of mango fall, leaf fall and wet weather. (7 February and 14 February 2020)
In Figure 2 that follows, administration is building 03, the hall is 44 and after hours school care is building 10. Building 35 is the original school and building 47 is the former residence.

Entrance 1 is the main entrance, entrance 2 was used as an alternative entrance from 2/12/2019 – 13/12/2019 to reduce the risk from falling mangoes. Entrance for out of hours care during the holiday period was through the hall entrance 3. Entrance 4 is to Prep.

![Figure 2: Part aerial view (DoE). The original frontage of the school is marked with a red arrow, arrows also mark existing entrances. Trees proposed for removal are circled and the bus stop is marked in blue. The bus zone extends down to the crossing; student drop off is to the south east of the crossing.](image)

This problem has persisted for some time. After a particularly severe storm in January 2013 the then Principal of Redland Bay State School emailed the Department of Education as follows (copy of email provided by DoE infrastructure):

“I’ve only just been able to get out of my home to come up to school. The front of our school is a total disaster. Traffic is stopping to take photos!! There are literally thousands of mangoes all over the road, the footpath and the paths at the front of the school. There are also many large branches down blocking the paths. One block of prep (closest to the council carpark) is completely blocked by a massive gum tree branch - impossible to get in with kids.

There are many branches down around the school but I believe the condition at the front makes it impossible for us to open to children tomorrow.”

4.1 Record of activities during the Christmas Break 2019/2020

Nowadays the school grounds are used before and after normal school hours and during most of the Christmas Break, primarily due to after-hours school care, which also uses the hall. For 40 weeks per year the Hall is utilised 5 days/wk before and after school (unless it is being used for school purposes).
The following information was provided by the school about activities during the Christmas Break 2019/2020. Refer to Appendix 8.1 for detail concerning the use of the hall during the school term.

**Hall: Helping Hands vacation care**
- Hall is part of the 105 student licensed area for the vacation care provider
- Vacation care have access to the school hall from 6:15 am until 6 pm in all vacation periods throughout the year except for 2 week shut down period over the Christmas period.

**Hall: Rhee Taekwondo**
- 4 days over the Christmas vacation period

**Shorehope Church**
- Utilise the hall for 3 days in December and 3 days in January (church services)

**Redlands Early Learning Centre**
- 1 day/night for kindergarten graduation (18 January)
- Were required to clean the outside of the hall

### 4.2 Photographs 2019/2020 fruiting period

The photographs that follow were recorded by DOE facilities management and by the School.

(note that this tree is not proposed for removal)

#### 3.12.2019 fallen limb
3.12.2019 fallen limb

8.01.2020 Gordon Road and lower level footpath

8.01.2020 Council bed between lower and upper footpaths

8.01.2020 Main entrance north west of mango tree proposed for removal

8.01.2020 Falls under the mango tree proposed for removal at the main entrance

8.01.2020 Falls under the mango tree proposed for removal. The concrete path alongside the brick paving is from the main entrance.
<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.01.2020</td>
<td>Main entrance</td>
</tr>
<tr>
<td>14.01.2020</td>
<td>roof walkway to hall</td>
</tr>
<tr>
<td>14.01.2020</td>
<td>hall roof</td>
</tr>
<tr>
<td>16.1.2020</td>
<td>Steps from road to upper level footpath and main entrance.</td>
</tr>
<tr>
<td>16.01.2020</td>
<td>Main entrance</td>
</tr>
<tr>
<td>16.01.2020</td>
<td>upper level footpath</td>
</tr>
</tbody>
</table>
4.3 Maintenance constraints
Unfortunately there is only one groundsman due to funding constraints. The mango season is also the busiest time for mowing and he takes 2 weeks annual leave through the Christmas Break. The school has three ovals and encompasses more open space and trees than other schools, which means there is little time for additional tasks like collecting mangoes.

Employment conditions do not provide for other staff, teachers’ aides or cleaning staff to do ground works. Since the start of the 2020 term the Principal has been checking the Council footpath, steps and the entrance path every morning and removing mangoes.

Although the problem is most evident during mango season, there is a problem year round with leaf fall, particularly on the hall roof.

5 HEALTH OF TREES PROPOSED FOR REMOVAL
The mango trees on the front boundary are of some concern in that epicormic growth from previous lopping can result in structural issues. The health of the tree near the entrance (proposed for removal) also has been compromised by a built up garden bed.

Three reports are relevant:

- Arbor Operations report for Redland Bay State School JHB 28756 dated 19 January 2012
- Family Tree Care Aboricultural Assessment Report prepared for Redland Bay State School 13 February 2018
- Independent Arboricultural Services, Arborist Comments Report, for Department of Housing and Public Works, Draft 26 March 2018

In 2012 Arbor Operations assessed the mango trees as being in good health with no significant decay present and did not recommend any work. It was noted that the trees had been topped.

In 2018 Family Tree Care suggested that the lopping of the mango trees had resulted in potentially dangerous regrowth and assessed that the lopping had occurred about 10 years ago. They recommended removal of two of the mango trees on the boundary and reduction of the third mango tree on the boundary by 50% and subsequent management by lopping every two years as if pollarded.

In 2018 Independent Arborists also noted that the trees had been lopped in the past but recommended that the mango trees be retained. They suggested a crown clean to remove any dead wood, mulch and crown lift. Their suggestion of netting under the trees to catch fruit was not practical within a school environment.

Both Family Tree Care and Independent Arborists noted that epicormic growth after lopping was more likely to be a structural risk than if the trees had been correctly pruned.

Pollarding so that the trees did not bear fruit would have been acceptable to the school at that time but from a heritage perspective the aesthetic values of the trees and the school frontage would be lost.

5.1 Mango tree on front boundary near entrance gate
Family Tree Care recommended this tree (tree 2 in their report) for removal because of the amount of pedestrian traffic under the tree, its potential for limb failure at previous lopping knuckles and dropping of mango fruit. Its condition was assessed as ‘poor’. It was noted that the relatively recent raised bed could pose a risk of root rot.
Independent Arboricultural Services assessed this tree (tree 4 in their report) as being in fair health and also noted it had been lopped. They recommended it be retained with a crown clean, mulching under, aerial inspection of branch unions, and live branch removal to remain under 50mm diameter. Due to the high occupancy of the area it was recommended that a tree health, form and risk assessment be undertaken every 12 months by an AQF Level 5 Arborist and by a nominated staff member of the school after every storm event.

5.2 Mango tree near hall
Arbor Operations described this tree (tree 1 in their report) as ‘a large well structured Mango tree’ and recommended it for retention because it was in good condition without evidence of previous lopping. There was a suggestion it be pruned back to reduce fruit production.

Independent Arboricultural Services assessed the tree (tree 8 in their report) as being in fair health and thought that the tree had been lopped (they may have been referring to the lower branches).

6 OPTIONS
A number of options have been considered since the exemption certificate for the landscaping was issued in September 2019. These are summarised in the tables that follow. Refer to appendix 8.2 for photographs as existing.

6.1 Mango tree at entrance to school
This tree has been most problematic for the school because it is stands immediately next the main entrance gate to the school and overhangs the Council footpath at the top of the main stairs from the road.

The entrance to Redland Bay School is constrained by the narrow frontage. Access must be provided for 975 students daily (expected to increase to 1,100 by 2021) and their parents. The problem has been compounded by Redland Shire Council, which has lowered the road outside the school. A crossing on Gordon Road now provides access to two substantial sets of steps leading up to a very narrow pavement area immediately outside the main entrance gate to the School. There are two council footpaths, one on top of the retaining wall and one below. Disabled access is via a ramped public footpath in front of the preschool and leads to the Council carpark at the north west end of the site.

The school advises:

- A large proportion of students use the Council steps immediately outside the main entrance to the school. All those students who live in the housing estate opposite the school and those who park on the other side of Gordon road (the majority of on street parking is available there) or park in the streets in the estate, cross at the crossing and then enter up the steps and through the main gates.
- Any student who needs to cross Gordon road to get to other parts of the catchment must cross the road at the school crossing due to the lack of pathways on the school side of Gordon Road and the Creek crossing.
- Students who use the drop and go zone to the south east of the crossing use a set of steps in front of the hall.
- The prep gate near the boundary of the main school is used by prep parents that park at the north west end of Gordon Road.
- The pathway inside the prep school zone is not sufficiently wide for the volume of traffic if too many people used this gate. This is also the area where prep parents are required to
wait prior to school. There is a set of steps and a gate to the prep area which has to be opened and closed each time a person entered the Prep school grounds.

In the afternoons the bus students (walking in a large group under teacher supervision) are walked by teachers on duty through the Prep gate. The bus zone is to the north west of the crossing.

<table>
<thead>
<tr>
<th>No</th>
<th>OPTION</th>
<th>HERITAGE IMPACT</th>
<th>PRACTICAL ISSUES OF CONCERN TO THE SCHOOL</th>
</tr>
</thead>
</table>
| 1  | Retain all trees including mango tree at entrance gate with a crown clean, mulching under, aerial inspection of branch unions, and live branch under 50mm diameter. Annual pruning by cert 3 arborist. | None | – The school does not have the human resources to collect the mangoes daily.  
– A few mangoes can be as dangerous as a lot of mangoes as people are less aware of the danger.  
– The cost of annual pruning is too high.  
– Leaf fall remains a problem on the footpath outside the main gate and the area inside. |
| 2  | Retain all trees including mango tree as option 1. ALSO close main entrance 1 and use entrance 2 during entire mango season and Christmas break (diagram follows). | None | – Due to the numbers attending the school, two entrances are required during term time.  
– There would still be problems with fruit and leaf litter on the footpath outside the boundary unless access via the pair of stairs up from the road was also closed.  
– Leaf fall remains a problem.  
– Disabled access is from the carpark. |
| 3  | Retain all trees including mango tree as option 1. Move entrances to Preschool entrance and to hall gate. | Moderate: moves main entrance and focus of school away from the original forecourt. | – The school wants retain the original forecourt to the older buildings and the administration area as the focus and doesn’t want most people entering through a side gate and trafficking across the school.  
– There would still be problems with fruit and leaf litter on the footpath outside the boundary unless access via the pair of stairs up from the road was closed.  
– Depending on where people were coming from, they could have to pass the main entrance and double back. |
<table>
<thead>
<tr>
<th>No</th>
<th>OPTION</th>
<th>HERITAGE IMPACT</th>
<th>PRACTICAL ISSUES OF CONCERN TO THE SCHOOL</th>
</tr>
</thead>
</table>
| 4  | Retain all trees including mango tree as option 1. Make new entrance close to existing second entrance through new plantings see below. Indent fence in this location and move paved area away from existing mango tree. Use the hall entrance during vacations. | Minor. Moves main entrance from original location. Retains school forecourt as focus. Reversible. | – There would remain a problem with fallen mangoes and leaf litter on the narrow footpath at the top of the Council steps for people coming up the steps or walking on the upper path from the carpark.  
– If the Council steps were rebuilt further away from the mango tree it is likely that DoE would have to pay the costs and might also have to provide a new ramp for equitable access. This is not a financially viable option. |
| 5  | Replace mango tree with a Brachychiton populneus (Kurrajong) as per landscape architect’s proposal | High impact initially then moderate as tree grows*. Tree should align with others. | Acceptable to the school. The school has agreed that they would be able to resource the management of fruit and leaf drop from the remaining two mango trees on the front boundary providing the area at the top of the Council steps is clear of leaves and fruit. |
| 6  | Replace mango tree with an alternative fruit tree | High.** | – Maintenance problem for the school in collecting fruit. |
| 7  | Heavily prune mango tree so it does not fruit | High | – Visually unappealing at entrance to the school. |

*The mango tree has been assessed as having considerable significance as an historic planting and exceptional significance for its contribution to streetscape value. This option would seek to retain streetscape value by using a tree of similar form and appearance even though it is a native species (see policy 19). There would be a visual impact while the tree becomes established. The use of a Brachychiton acerflorius (flame tree) as a substitute for the populneus should possibly be avoided as it is not evergreen would be quite different to the populneus when it flowers. Advice from the landscape architect is required.
** Although substitution with another fruit tree would continue the historic theme of an agricultural community and would be in accordance with policy 19, it would be less satisfactory in re-establishing the streetscape.

![Figure 3: At left is a view of entrance zone looking north west. The mango tree proposed for removal is marked. Entrance 2 is in the foreground. Above is a poinciana recorded in 2012 (now gone) possibly in the flower bed at right.](image)

Arbor operations (2012) recorded a Peltophorum pterocarpum (yellow poinciana) in poor health probably in the bed bottom right figure 3 where a stump remains. The tree within the square raised box (stump remains) may have been a mango. (Pers. comment Alan Bunce, the present principal, who was deputy principal at the school in 2003-04).

There is a further option of replacing one of the proposed Harpulia pendula (Tulipwood - already approved) in this location with a Brachychiton populneus to reflect the earlier arrangement of a row of 4 mango trees along the front boundary. However it is proposed that the school proceed with the option approved under the Exemption Certificate.

![Figure 4: Excerpt Catherine Brouwer Architects Landscape concept 190508 June 2019 LSK 02 showing proposed species of the replacement tree for the mango and two stumps.](image)
6.2 Mango tree near hall

This tree has been causing problems for the school because it drops fruit and leaves over the hall roof and the entrance lobby to the hall. During term time the school uses hall for assembly and for other activities like music. Students access the hall via the covered way at the south west corner of the building to the main entrance midway along the north west façade.

Out of hours care makes use of the hall in conjunction with the OHSC building.

A plan of the hall is included in appendix 8.3. The main entrance doorway is located to provide easy access to students attending public assembly, who walk from the other buildings via the covered walkway.

<table>
<thead>
<tr>
<th>No</th>
<th>OPTION</th>
<th>HERITAGE IMPACT</th>
<th>PRACTICAL ISSUES</th>
</tr>
</thead>
</table>
| 1  | Retain with a crown clean, mulching under, aerial inspection of branch unions, and live branch under 50mm diameter. Annual pruning may not be necessary as there is no epicormic growth mentioned in the arborists’ reports. | None | – There would remain problems with keeping the hall roof and gutters clear of debris including leaves.  
– The school does not have the human resources to collect the mangoes daily.  
– Future rebuilding of retaining wall to increase size of entry landing to hall would possibly impinge on roots of the tree and become impractical. |
| 2  | As 1, also provide fence around mango tree on retaining wall at edge of path alongside the hall and kerb to assist in keeping walkway clear of leaves. | Minor | – Whilst it might sound like a cost effective solution, DoE has design guidelines which make such items very costly.  
– Design considerations include: durability, vandalism, potential access to hall roof, climbability by students, natural light to hall entrance, structural support on existing retaining wall, fire egress.  
– It could prevent direct vision into the area, causing supervision constraints |
REDLAND BAY STATE SCHOOL: PROPOSED REMOVAL OF MANGO TREES: R5

<table>
<thead>
<tr>
<th>No</th>
<th>OPTION</th>
<th>HERITAGE IMPACT</th>
<th>PRACTICAL ISSUES</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td></td>
<td></td>
<td>- Alternatively, installing netting would become another ongoing maintenance issue and another design requirement hurdle.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- This would not allow for future rebuilding of retaining wall to increase size of entry landing to hall.</td>
</tr>
<tr>
<td>3</td>
<td>Replace mango tree with a Brachychiton populneus as per landscape proposal</td>
<td>Moderate</td>
<td>The primary significance of this tree is its historical associations with the rural character of the school.</td>
</tr>
<tr>
<td>4</td>
<td>Replace mango tree with a Wheel of Fire tree (Stenocarpus sinuatus)</td>
<td>Moderate</td>
<td>Planting Wheel of Fire species was recorded at Redland Bay SS in 1924 but none survive. However it would be more consistent interpretation to replace both mango trees with the same substitute species if both are eventually removed.</td>
</tr>
<tr>
<td></td>
<td>Replace mango tree with an alternative fruit tree</td>
<td>Moderate</td>
<td>Maintenance problem for the school in collecting fruit.</td>
</tr>
<tr>
<td></td>
<td>Heavily prune mango tree so it does not fruit</td>
<td>High</td>
<td>Visually unappealing.</td>
</tr>
</tbody>
</table>

Figure 6: Excerpt Catherine Brouwer Architects Landscape concept 190508 June 2019 LSK 02 showing proposed species of the replacement tree for the mango tree near the hall.
7 ASSESSMENT OF PRUDENT AND FEASIBLE ALTERNATIVES

From a heritage perspective the more attractive options roughly fall into two categories – management solutions or moving the main entrance. Compromise solutions are discussed below, but are not considered to be ‘prudent and feasible’.

7.1 Retain the mango tree at the entrance gate and remove the mango tree near the hall

A compromise could be to remove the mango tree at the hall door (which is not important for its streetscape value) and replace it with another species and to limit access from the street to the hall entrance during the summer vacation. The tree near the entrance gate would be retained and managed. However this is not practical for the school:

- The school would still have to remove mango fruit at the entrance gate at least twice a day in term time during the first two weeks of December, during the last week of January and throughout much of February both inside the entrance gate and at the top of the Council steps.
- Leaf litter would have to be removed throughout the year both inside the entrance gate and at the top of the Council steps.
- Annual aerial inspection and pruning of the Mango tree at the entrance gate would be required to reduce the risk of structural failure due to weaknesses from epicormic growth, which would be costly.

7.2 Move the main entrance

The school needs several entrances to cope with the numbers of pupils and parents arriving and departing and all have to be from Gordon road. Access via the Preschool is limited by safety requirements. The option of moving the main entrance of the school to the south east of the existing location would have only minor impact on cultural heritage significance and could be made to work from a landscaping perspective. The original school forecourt could be retained as the focus and the gate and part of the pathway from the original main entrance could be retained as evidence. However this option is not feasible because of the arrangement of the road crossing and the council steps, which are a major access and would still terminate at the narrow footpath under the mango tree.

Theoretically, it would be possible to remove the North Western set of steps, retain the steps that connect to the crossing and build another set of steps further to the South East, but this would be extremely costly. The new entrance would need to be compliant with current Codes. This would probably involve major upgrade works to the front of the school including a compliant set of stairs and disability access ramp. The significant costs involved in such a project would not be viewed as high priority for the Redland Shire Council or the Department of Education, when there are so many other project priorities.

The route from the main entrance to administration is important for management of visitors to the school. In 2018 the (non-significant) administration building was extended to provide new space and an entrance to the building that aligned with the front gate of the school.

7.3 Replace the mango tree near the entrance gate with another species and manage the leaf and fruit fall from the mango tree near the hall

This option would maintain the fruit tree at the Hall with some sort of barrier to prevent fruit and leaves falling on the pathway and steps leading to the hall. Apart from the associated costs of finding and maintaining a viable solution, this would not be practical for the school:
– Leaf litter and fruit would still fall on the hall roof causing problems with blocked downpipes and deterioration of roof sheeting.

– If the landing outside the hall door has to be widened in future to accommodate more pupils for assemblies, this would require the retaining wall to be moved, which would interfere with the roots of the mango tree.

Access to the hall during term time is required at the south western corner and western side of the hall in order to link with the rest of the school. A second set of steps is proposed in the approved landscape plan, which is distant from the mango tree. It is not possible to move the entrance of the hall to this location without major modifications to the building (see plan in Appendix 8.3). The proposed path would not be covered and would run underneath an existing significant Ficus and Camphor laurel. During rain, when the path is most likely to be slippery, most pupils would still enter down the existing set of steps via the existing covered walkway.

It would be possible to plant another mango tree further away from the hall in a similar position, but this would be creating more maintenance problems for the school.

8 CONSULTATION
For some time there has been concern about safety issues concerning the trees. This was reflected in the conservation management plan recommendations and was presumably the reason the trees were topped in the past. There has been considerable consultation with DES. The school community is aware of the proposed changes.

The Department of Education Infrastructure Advisor confirms that Kim Richards MLA has already been consulted. The School Principal has provided both Julie Talty (Division 6 Councillor, Redland Shire Council and Kim Richards MLA with a draft of the submission.

Jinx Miles contacted Redland Bay City Council to determine if any special provisions applied to the trees and received advice (email from Candy Daunt, Senior Advisor, Environmental Planning and Policy 18/02/2020) that some trees at the school are entered in the State Register. She advised that none of the trees at the school were included in the Atlas of Living Australia where Redland Shire veteran trees are identified but suggested that they could be nominated to the Project https://biocollect.ala.org.au/project/index/7144ebcd-13b5-471b-b7c9-07b979598d58;jsessionid=17BF8550787109BB0D497C0E84D0ECD8.

9 RECOMMENDATION
It is considered that there is no prudent and feasible solution to removal of the two mango trees. The impact would be mitigated by:

– Retaining two of the mango trees on the boundary and pruning in accordance with the General Exemption;

– Replacing the mango tree near the gate with a Brachychiton populneus (Kurrajong) (section 6.1 option 5) which the Landscape Architect has advised is an evergreen tree of similar character. Use of a Brachychiton acerifolius (flame tree) as a substitute tree is not recommended as this tree is not evergreen. It is understood that the availability of mature trees varies considerably and if at the time of documentation a substitute tree is required, approval of DES should be sought. The tree should align with the other mango trees.

– Replacing the mango tree near the hall with a Harpulia pendula (tulip wood) near to the present mango tree. All in accordance with Catherine Brouwer Landscape Architects Landscape Plan LSK02
APPENDICES

10.1 Use of the hall during the school term (record provided by the School)

The hall is heavily used during the school term. Out of the mango season leaf fall remains an issue.

- Hall hired by external groups 4 of 5 week days in the afternoon/evenings (Tae kwon do x 2 clubs)
- Hall hired by external groups Sunday (Shorehope Church) 52 weeks
- Hall utilised by Helping Hands Before and After Hours School care 5/5 weekdays as part of their license of 105 students (6:15 – 8:30 am, 3:00 – 6:00pm)
- Instrumental Music Strings – 2 days per week
  - String ensembles – 7:30 – 8:30am (Mon, Tues)
  - 30 minute lessons all day between 9 am and 2:50pm (2 days/week Mon, Tues) in teaching space
- Instrumental Music – Percussion/woodwind/brass
  - Junior Band – 7:30 - 8:30 Wednesday (Hall main floor)
  - Senior Band – 7:30 - 8:30 Thursday (Hall main floor)
  - 30 minute lessons all day between 9 am and 2:50pm (2 days/week, Wed, Thurs) in teaching space
- Use of hall for PE lessons during wet weather for indoor activities (as required)
- Use of hall for lunch time clubs – Skipping club, Table tennis club (Various lunch times, weekly)
- Use of hall for class rehearsal of parade performances (weekly)
- Use of hall by dance groups (Friday Mornings 7:30 – 8:30am)
  - Hip hop, Dance troupe
- Use of hall for weekly assemblies (Thursday afternoon each week) 975 students, staff and parent community.
- Use of hall for school events
  - Leadership induction
  - ANZAC ceremony
  - Year 6 Graduation and disco
  - School Incursions - Performing Arts, Science Maths, Days of Excellence for cluster schools.
- Use of hall for Parents and Citizens Association fundraisers
  - School Discos (4 per year – Friday night)
  - Shorehope church – coffee and chat for families (weekly)
  - Tea and Tissues for new parents (first day of school)
  - Use of kitchen area as pick up are for P&C fundraising activities
    - Cookie dough
    - Pie drive
  - Mothers’ day stall, Fathers’ day stall
10.2 Photographs as existing (14.02.2020)

View from across the road. Mango tree for proposed removal marked.

View from across the road. Mango tree for proposed removal marked.

View from across the road. Mango tree for proposed removal marked. The bus zone commences at the right hand set of steps (see arrow).

View from entrance stairs from the road. Mango tree for proposed removal marked. The two mango trees to the right of this tree to be retained.

View of entrance steps from the road.

Entrance steps from the road.
REDLAND BAY STATE SCHOOL: PROPOSED REMOVAL OF MANGO TREES: R5

Upper footpath looking south east. Mango tree proposed for removal marked.

Upper footpath looking south east. Mango tree proposed for removal in foreground

Upper path looking north west. Mango tree proposed for removal upper left. Note narrow width of footpath.

Inside the school looking north west. Mango tree proposed for removal centre background. (Approved landscape plan shows planting of more trees to replace the stump with the raised surround and a stump at right.)

Mango tree near hall proposed for removal. Hall in the background.

Mango tree near hall proposed for removal. Walkway to hall at right.
Steps from walkway to hall

Path alongside north west wall of hall. Entrance doors at right.

Prep fence and gate and ramp to carpark looking north west

View south east from Prep gate

View south east walking from Prep Gate. Two mangoes to remain
10.3 Plan of hall

Figure 7: Plan of hall 5.5.2010 (eplan 24201001). Main entrance marked. If a new entrance was built it would have to be to the right of the existing entrance in the diagram which would require replanning of the heavily serviced WCs and kitchen.

10.4 Recommendations of the CMP

The CMP section 6.13 is relevant to this application and is quoted below:

‘The mature shade trees on the front boundary are a landmark in the local area. The school landscape is also significant as the setting of the historic buildings, which formed what was once a small country school complex. The rural character, enhanced by Arbor Day plantings and the surrounding agricultural landscape was retained at least until 1977.

Significant landscape features include:

- The locations of existing street entrances in front of the Administration building (original entrance to Block B), the double entrance in front of Block A and the entrance in front of the residence.
- Mature camphor laurels and mangoes on the front boundary
- Mature camphor laurels marking the original western side boundary (now removed)
- Mature fig, camphor laurel, date palm and mango to the north-west of the hall
- Remains of the forestry plot to the south east of the hall

Under heritage legislation ...

The School wishes to remove mango trees on the front boundary because of fruit fall and leaf litter and to provide covered waiting areas for parents and a pathway to the Prep area to the north west. The cost of maintaining the trees is also an issue.
From a heritage perspective it would be premature to carry out significant works that are destructive to cultural heritage until a masterplan has been prepared or at least a broader assessment of landscape issues in front of the historic buildings has been carried out. Options like opening up under Block A for a covered play/waiting area may reduce the pressure on development of the area in front of the school. The area in front of the school could be opened up, retaining significant mature trees, without impact on significance similar to that in photographs from 1930 – 1970 that follow.

Independent Arboricultural Services did not identify any of the significant trees as being dangerous but recommended minimising risk by pruning in accordance with the Australian Standard AS4373 Pruning and Amenity of Trees. It is understood that this involves thinning and removal of any decayed branches to the sockets. Low level hanging branches (small diameter) could be removed to open up the area under the trees. Apart from preserving the aesthetic of the trees, this is also more sustainable than lopping or pollarding, which has to be redone every two years to remove weaker epicormic growth that results. Damage to the fig tree should be monitored.

Pollarding is not recommended. Although it would preserve the evidence of the trees, the exceptional landmark and aesthetic significance of the treed front boundary would be lost.’

‘….. As well as responding to heritage values, the landscape design should consider the benefits of mature shade trees which include providing a cooler environment (shade structures do not provide the cooling effect of trees), sun protection and general wellbeing.

From a heritage perspective the preferred option is:

- Retain all significant trees, pruning in accordance with the DES technical notes relating to the General Exemption Certificate and the advice from Independent Arboricultural Services so that they are safe and sustainable. Note that the Australian Standard does not require supervision by a level 5 arborist but advice should be taken for pruning outside the limits of the General Exemption.
- Prune hanging branches (up to 50mm) and remove low level shrubs under trees to open up the area under the trees;
- Investigate the feasibility of roofing pathways and waiting areas underneath canopies if they are required. Design footings in accordance with the Arborist’s recommendations. Floors might incorporate board walks with vermin proofing under. Investigate alternative designs of roofs including solid/shadecloth; sloping without gutters; a hose location nearby to hose off leaves; a ledge along the back providing easy access to sweep off leaves;
- Remove fallen mangoes before the start of term and then daily removal until the fruiting season has finished;
- Redirect use of the site during the Christmas break to the hall entrance.
- Review management practices in 5 years when pruning may be required again.’

| Policy 19. Conserve significant plantings and investigate alternative solutions where there are conflicts with functional requirements. | Landscaping which is detrimental to the heritage values of the school should be avoided until it can be integrated with master planning;
- Short term planning for the area in front of the School should investigate options which allow the existing significant trees to be retained;
- Landscape plans for the area around significant trees should be developed in consultation with an Arborist level 5;
- Significant trees should be monitored and pruned for safety and improved health and management in accordance with the Australian Standard, they should not be lopped or pollarded;
- A management strategy to remove as many mangoes as possible before the start of the school term should be adopted; |
Infill planting on the front boundary should be ornamental trees not natives and will require heritage approval

An earlier draft of the CMP (version R4 May 2018 that was not approved by DES but used in preparation of the proposed landscape plan) further noted in s.6.16:

‘An alternative option (see appendix 3) which involves more impact on cultural heritage significance is:

- Remove one mango tree (to the south east of the main entrance) and plant new ornamental shade trees between the entrance and the large camphor laurel near the hall, possibly Peltophorum pterocarpum as previously removed. Natives should not be planted in this area which was traditionally the location for Arbor Day plantings.
- Prune other significant trees in accordance with the General Exemption and Arborist’s report and review management in 5 years when pruning may be required again.

If neither of these options is acceptable, application should be made the Department of Environment and Science with an argument about why there is no prudent and feasible alternative to removal of the trees.’ The mango tree close to the hall was not mentioned.

The gap of almost a year between the preparation of the draft CMP R4 and the final version R5 occurred due to the change in the entry in the Queensland Heritage Register that was processed during this time to include a larger heritage boundary. The previous entry included only the school residence and did not include the school buildings or the landscape setting.

10.5 Previous application for an exemption certificate for landscaping (approved except for removal of the mango trees)

The rationale for the landscape design submitted with the application for an exemption certificate was explained in a Heritage Impact statement submitted with the application (Catherine Brouwer Landscape Architects June 2019) and an Information Request Response Report (Catherine Brouwer Landscape Architects 30 August 2019) submitted to DES.

Some relevant points from the IR response are quoted below:

‘1. The school advises: Alternative design solutions were considered. Additional design solutions that do not involve the removal of existing trees have not been researched due to the following:

- Restricted access from existing school crossing;
- Inability to change existing Council infrastructure: two stairways and pathways; retaining walls, pedestrian crossing and build-outs; barriers and signs associated with the pedestrian crossing; the service road to the Gordon Road east side car parking; and the car parking arrangement marked along Gordon Road in a layout tailored to suit the existing pedestrian crossing and build-outs.

Cost of engaging landscape architect to design multiple plans (as other option is not viable).’

‘2. … The 2018 CMP states that landscape works, or “site specific development” which “has been assessed as having a minimal or no impact on the cultural heritage significance” of the place, is as follows:
– *Repair and replacement of existing front fence in galvanised chain mesh providing entrance locations remain the same.* CMP, p. 82.’

[Note – this was a recommendation for a site specific exemption regarding fencing and did not preclude an alternative design as part of a considered landscape scheme.]

‘3. The 2018 draft CMP has established that the "View of mature trees on frontage from the street" is of Exceptional significance, noting that "the trees are the primary marker of the historic site." CMP, p. 40.’

The proposed replacement species for the mango tree on the boundary was revised and a Brachychiton populneus was proposed. This tree was selected because it grows to a similar character as a mango, evergreen with an upright trunk and a spreading canopy with mid-sized, dark glossy green leaves. (Catherine Brouwer pers. comment).

The IR response further noted: ‘The heritage significance and attractive amenity of the trees along the frontage are acknowledged and recognised in the proposed landscape Concept Plan by the replacement tree planting. The replacement tree will be in the same alignment / location as the tree to be removed. The fence is to be set a little further inside the school grounds to provide the necessary circulation space at the footpath (Council land) which is missing now (and possibly unsafe). The tree will be planted as an advanced tree, however as it grows the tree will become even more visible from the street and become part of the treed presentation and identity of the school.’

10.6 Attachments

The following attachments are relevant to the process of discussion and previous approvals.

– Exemption Certificate 201907-9124EC
– Exemption Plan September 2019
– IR response 30 August 2019 (includes revised landscape plans referred to in this submission) Catherine Brouwer Landscape Architects
– Heritage Impact Statement June 2019 Catherine Brouwer Landscape Architects
– Heritage Conservation Management Redland Bay State School R5 May 2019 Jinx Miles

Arborist’s reports

– Family Tree Care Arboricultural Assessment Report prepared for Redland Bay State School 13 February 2018
– Independent Arboricultural Services, Arborist Comments Report, for Department of Housing and Public Works, Draft 26 March 2018