Asset Management/ Infrastructure

Introduction

This discussion paper has been informed by site observations of existing water, sewer, stormwater, gas, power and telecommunications services. The existing road network was also inspected to assess the condition of trafficable and pedestrian pavements.

We have also reviewed two earlier reports (2001 & 2008). Both these reports draw similar conclusions about the extent of existing services but do not draw definitive conclusions about their capacity or condition. Both of these reports can be described as a 'desktop studies' supported by site observations – it is difficult to draw from them definitive conclusions about the condition or capacity of specific elements of a service network.

This paper seeks to build on the previous reports by identifying opportunities and constraints that could inform the master plan of an appropriate infrastructure strategy. This strategy will need to strike a balance between maintaining (or reusing) existing infrastructure and construction of new site infrastructure.

The challenge is to balance the economical utilization of exiting services with the construction of new services: to determine the right 'mix' of new services to existing services detailed investigation is required.

Three key characteristics of services need to be understood before informed decisions can be made; location, capacity and condition. The suitability of existing services can be finalized when the type of development (particular building use) is known.

Strengths

On-site stormwater detention facilitates would not be required for this site due to its proximity to Sydney Harbour.

There are no apparent significant instances of site damage due to the stormwater drainage system being blocked or under capacity.

Significant authority (i.e Sydney Water, Energy Australia, Atlanta, Telstra, Optus) infrastructure is present within the site or immediately adjacent to the site. We envisage this infrastructure is able to cater for current and future site demands. Further direct consultation with service Authorities is required to confirm our opinion.

The constraints of the Callan Park Act (limiting new development to the location and size of existing buildings) means that it is unlikely that future demand for services will increase significantly from currently levels.

Constraints

Although the age of the existing pavements is unknown, it appears they have reached the end of their service life, and now require more than minimal maintenance. A lack of maintenance may have contributed to accelerated rates of deterioration. The deterioration is primarily due to water ingress to the pavement structure through cracks and discontinuities in the asphalt surface. Our site review indicates a significant portion of the pavements require rectification works immediately.

Kerb and guttering is also in a dilapidated condition and requires rectification works.

The kerb and gutters may have some heritage value, particularly those formed form sandstone.

The minor drainage system servicing the roads and buildings is owned by the Department of Health. Many pits are completely blocked with sediment and deleterious materials and would require maintenance. Prior to any investigation to determine capacity or condition the system would need to be cleaned.

Leichhardt Council stormwater drainage infrastructure (such as pipes and channels) is located within the site. Generally this infrastructure conveys stormwater from upstream catchments (in addition to site generated stormwater runoff) to Sydney Harbour. There is some confusion as to the extent of the system that is controlled by Leichhardt Council.

We estimate that the newest portions of the drainage system are 40 years old, and may not comply with current standards for capacity.

We understand that the site does not have ready access to high speed internet (or data) services. New development and new uses on the site may be constrained by this.

Opportunities

Rectifying existing pavements would primarily involve reconstructing existing pavements and installing a new asphalt surface.

It is likely that the existing pavement materials could be exhumed, processed and reused.

Some materials (particularly concrete) resulting from building demolition could be used for pavement reconstruction.

Reconstructing pavements would be conducive to implementing a stormwater drainage strategy that is aligned with the principals of water sensitive urban design (WSUD).

If an alternate strategy for stormwater drainage is adopted it may be viable to delete guttering to the roads.

Future development on the site can be designed to avoid disruption to the stormwater drainage system.

There are opportunities to utilize existing services infrastructure for future development outcomes. To do this would mean further investigation of the capacity and condition of existing infrastructure.

All site generated stormwater runoff currently discharges into Sydney Harbour untreated. Considering the large amount landscape areas on the site we are of the opinion that pollutant would be lower than runoff from a typical urban area. The large amount of exiting open space is also conducive to provision of water treatment measures (which is also in line with a WSUD strategy).

The future WSUD strategy for the site will influence the final form of the stormwater drainage system. In this regard it may be feasible to abandon the traditional below ground pit and pipes and rely on swales for the management of stormwater runoff. Furthermore a rainwater harvesting could be incorporated into such an approach. Adopting a WSUD strategy is highly likely to reduce demand on any formal drainage system.

An ecologically sustainable design (ESD), incorporating WSUD strategy would also limit increases to service demand by lowering energy consumption and water usage.

To provide a snapshot of existing services and the capacity of Authorities to meet the demand of any future development. Such works would include:

- Preparation of an infrastructure data base or register
- Intensive consultation with service Authorities
- Closed circuit television (CCTV) inspection of water, sewer and stormwater infrastructure.
- Potholing of gas, power and telecommunications infrastructure to confirm size and condition
- Pressure testing of water and gas services to determine condition.
- Modelling of services to calculate capacity.

Risks

Investigations into the suitability of existing infrastructure for new development can be costly and time consuming, with a risk of finding the service unsuitable. It may be more economical to abandon old infrastructure and construct new services.

Without further investigation it is difficult to determine economic viability of maintaining an existing system.

Existing infrastructure will deteriorate further without significant expenditure on maintenance.

Appropriate future uses may be constrained by the lack of acceptable infrastructure.

Expectations

That the heritage significance of Callan Park, including its historic buildings, gardens and other landscape features, will not be compromised by inadequate infrastructure

Bibliograpghy

The Callan Park (Special Provisions) Act

Hughes Trueman Pty Ltd, *Rozelle Hospital Preliminary Infrastructure Investigation:* December 2001

URS, *The Callan Park, Utilities and Pavement Condition/ Capacity Report:* April 2008