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The State Government is committed to providing a better health system for all Western Australians.

Fundamental to achieving this goal is the provision of health services closer to where people live and modernising models of care.

The redevelopment of the Queen Elizabeth Medical Centre (QEIIMC) is part of the multi-billion dollar investment in health infrastructure for Western Australia. The proposed investment in the QEIIMC site is stage 1 of the plan to establish the QEIIMC as one of Perth’s major Tertiary hospitals and a key health care delivery centre.

Key components of the stage 1 redevelopment include the construction of the new Children’s Hospital, carparking, Mental Health Unit, Central Plant, Western Power sub-station compound, WAIMR, Pathwest, Cancer Centre, TICHR and major upgrading of associated site facilities and services. The redevelopment accords with the recommendations of the Reid Report – the blueprint for the delivery of a world-class health service commissioned in 2004. It will bring the current ageing facilities into the 21st century along with new, purpose-built facilities.

The QEIIMC site is bounded by Winthrop Avenue, Monash Avenue, Aberdare Road and Hollywood Private Hospital and already includes Sir Charles Gairdner Hospital, a number of University of Western Australia facilities and significant research, allied health and other health-related facilities.

The site has been earmarked specifically for health and education purposes since the 1960s and we are very proud to be developing the site as a major health and research centre.

Opposite Kings Park and just four kilometres from the centre of the city, the QEIIMC site is also set to enjoy even better public transport access, particularly from the northern and eastern suburbs.

This ambitious first stage building program is scheduled for completion by 2015 when we look forward to celebrating the development of a new Children’s hospital and associated research facilities, education and research facilities.

Stage 1 will also involve multi storey parking facilities that will be developed in an integrated way with the recently launched Travel Plan and Public Transport Master Plan. Both Plans encourage greater use of public transport, cycling and walking – particularly for “nine-to-five” employees at the site.

The Master Plan for the QEIIMC site accommodates the development of a Statewide Centre for Women and Newborn Services, the further expansion and upgrading of adult services, education and research facilities.

I urge all Western Australians to welcome the Master Plan for this impressive redevelopment of an iconic site – and throw their support behind the work being done to maintain a world-class health system.

Dr. Kim Hames MLA
Minister for Health
QEII MEDICAL CENTRE_SITE PLAN
ULTIMATE DEVELOPMENT
05.10.2010
(UWA)
RESEARCH & EDUCATION CENTRAL PLANT WEST
WESTERN POWER SUB-STATION COMPOUND
LIONS EYE WAIMR
WAIMR INCLUDING CONFERENCE & ED
HOLLYWOOD PRIVATE HOSPITAL
VERDUN STREET
MENTAL HEALTH CENTRAL PLANT WEST
CENTRAL PLANT WEST
WESTERN POWER SUB-STATION COMPOUND
PATHWEST FUTURE HOSPITAL EXPANSION
ADULT'S HOSPITAL CANCER CENTRE
DIAGNOSTIC AND TREATMENT HYDRO POOL
SPECIAL DEVELOPMENT ZONE PATHWEST
FUTURE HOSPITAL EXPANSION
BANKSIA STREET WOMEN'S HOSPITAL
UWA POTENTIAL RELOCATION OF CRAWFORD LODGE
CALEDENIA STREET GAIRDNER DRIVE
(UNDERGROUND PARKING)
HOSPITAL AVENUE
Ext.
FUTURE EXPANSION UWA & HOSPITAL
(UWA) RESEARCH & EDUCATION
(UWA) RESEARCH & EDUCATION
(UWA) RESEARCH & EDUCATION
CANCER CENTRE
LANDSCAPED FORECOURT CAR PARK CAR PARK
SPECIAL DEVELOPMENT ZONE 2 - MONASH AVENUE PRECINCT ANTICIPATED PRINCIPAL USE - UWA EDUCATION
SPECIAL DEVELOPMENT ZONE 1 - WINTHROP AVENUE PRECINCT ANTICIPATED PRINCIPAL USE - ANCILLARY SUPPORT AND CARPARKING
UWA SPECIAL DEVELOPMENT ZONE
UWA SPECIAL DEVELOPMENT ZONE

* SUBJECT TO THE RELOCATION OF CRAWFORD LODGE

File Path:F:\pro\arc\04\PPA0408\17 Drawings\17d_Illustrations\QEIIMC_HealthServRedevStaging

QEII MEDICAL CENTRE SITE PLAN ULTIMATE DEVELOPMENT 05.10.2010 (UWA) RESEARCH & EDUCATION CENTRAL PLANT WEST WESTERN POWER SUB-STATION COMPOUND LIONS EYE WAIMR WAIMR INCLUDING CONFERENCE & ED HOLLYWOOD PRIVATE HOSPITAL VERDUN STREET MENTAL HEALTH CENTRAL PLANT WEST CENTRAL PLANT WEST WESTERN POWER SUB-STATION COMPOUND PATHWEST FUTURE HOSPITAL EXPANSION ADULT'S HOSPITAL CANCER CENTRE DIAGNOSTIC AND TREATMENT HYDRO POOL SPECIAL DEVELOPMENT ZONE PATHWEST FUTURE HOSPITAL EXPANSION BANKSIA STREET WOMEN'S HOSPITAL UWA POTENTIAL RELOCATION OF CRAWFORD LODGE CALEDENIA STREET GAIRDNER DRIVE (UNDERGROUND PARKING) HOSPITAL AVENUE Ext. FUTURE EXPANSION UWA & HOSPITAL (UWA) RESEARCH & EDUCATION (UWA) RESEARCH & EDUCATION (UWA) RESEARCH & EDUCATION CANCER CENTRE LANDSCAPED FORECOURT CAR PARK CAR PARK SPECIAL DEVELOPMENT ZONE 2 - MONASH AVENUE PRECINCT ANTICIPATED PRINCIPAL USE - UWA EDUCATION SPECIAL DEVELOPMENT ZONE 1 - WINTHROP AVENUE PRECINCT ANTICIPATED PRINCIPAL USE - ANCILLARY SUPPORT AND CARPARKING UWA SPECIAL DEVELOPMENT ZONE

* SUBJECT TO THE RELOCATION OF CRAWFORD LODGE

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Executive Summary

The redevelopment of the Queen Elizabeth II Medical Centre (QEII) proposes the development of world-class facilities that will facilitate and support leadership in clinical care, research and education in the State of Western Australia (WA). The Master Plan seeks to guide the establishment of facilities and services that are patient-centred, optimise clinical efficiency and make a positive contribution to the urban fabric of the Cities of Subiaco and Nedlands.

This Master Plan for the QEII will provide the planning and design framework for the future delivery of Adult, Children's, Women's and Newborn health services within a fully integrated campus environment.

The Master Plan has been developed through a consultative design process. Consultation with hospital end-user groups and stakeholders has been critical in the development of the Master Plan. The consultation methods have sought to capture the information and data that was needed by the QEII Master Plan Design Team to produce a robust, flexible and responsive framework for the redevelopment of the site and existing facilities.

Site Access/Structure Plan

In November 2005, a site access and structure planning process began for the purposes of creating a framework for the future master planning of the site. The structure plan outlines measures to be put in place to minimise the impact of development on surrounding areas, and to outline transport, access and parking measures that will have to be implemented in association with ongoing development. The Master Plan study has been guided by this framework and recommendations.

Prior to commencing detailed planning, the Master Plan design team undertook a review of the Draft QEII Access and Structure Plan to establish the key design drivers arising from the broader surrounds of the campus within the context of the local community. Design aspirations that would guide the design to reflect a quality of place that celebrates the characteristics, culture and potential of the existing site, facilities and environment were also established.

Approval of the Access and Structure Plan was granted by the Western Australian Planning Commission in June 2007. Conditions to the approval that impact directly upon the Master Plan concept have been incorporated in the plan.

Hospital Master Plan

It is intended that the redevelopment of the QEII will incorporate a 'state of the art', new Children's hospital, a future Women's and Newborn Centre and provide 'flagship' facilities for a revitalised healthcare system serving the North Metropolitan Area Health Service (NMAHS) and the State of WA. As such, it has an obligation beyond the functional. Through careful collaboration, the design team has looked to marry the provision of complex clinical and service functions with the delivery of a high-quality contemporary design. They have utilised their international experience to ensure that the QEII will reach its full potential as a 'world-class' facility.

To ensure the redevelopment supports the attainment of ‘best practice’, the design team has investigated international trends and the design principles used in healthcare buildings. Elements of the healthcare environment such as texture, views, natural light, art, landscape and proportion have a powerful healing and therapeutic effect on patients, their families and staff. These elements significantly contribute to faster recovery, staff retention and morale. These were some of the key fundamental principles that guided the development of the Master Plan.

It is fundamental that the QEII proactively responds to the current world-wide shortage of clinical and nursing personnel. The Master Plan will facilitate the design of facilities which will be efficient in their utilisation of human resources and creates the environment which promotes and enables collaborative work, flexibility, efficiency and productivity; enabling active recruitment and retention of high quality clinical personnel in a limited market place.

Education And Research

The Master Plan leads the way in providing an excellent teaching and research facility. It is essential that these needs are met to cater for the increase population particularly aged and acute and growth required in the medical profession.

Recommendation

The Master Plan consultant team recommends the adoption of this Plan as the planning and design framework for the long term redevelopment of the QEII site.

Key attributes of the Master Plan.

- Facilitates the immediate programme needs for the construction of a new Children's Hospital and associated research facilities
- Facilitates the immediate programme needs for the identified Stage 1 redevelopment of Sir Charles Gairdner Hospital (SCGH), largely independent of other stakeholder initiatives
- Allows for the ‘planned’ redevelopment of SCGH and the future co-location of the Women’s and Newborn Hospital
- Facilitates construction of substantial ‘new build’, maximising the potential for the design of care and work environments to meet current and future design standards and specific functional needs
- Successful integration of public transport initiatives proposed for the QEII and surrounding Cities of Nedlands and Subiaco
- Primary circulation routes and connections within the site facilitating the development of linkages and opportunities for future relationships and activity within the adjoining commercial and residential precincts of the Cities of Nedlands and Subiaco
- A planning strategy that allows for incremental growth and change
- Creating a world class multi hospital integrated health campus incorporating Adult, Children, Women's and Newborn services
- Opportunities to plan and develop international best practice models of care, including a 'horizontal' block stack model that can facilitate the potential co-location of like services e.g. operating and interventional service for the Adult, Children's, Women and Newborn Hospitals, thereby promoting high levels of staffing, equipment and services efficiency and minimising duplication
- Dedicated research and education precincts having high levels of connectivity with hospital patient care facilities and the opportunity to promote their identity
- Increased utilisation of available land area allowing the development of special development zones fronting Monash Avenue, providing a major opportunity to create a new urban frontage for the site
- Provides for the rationalisation and implementation of site car parking strategies and the potential integration of a city mass transit system on the site
- Articulates a ‘collective vision’ for the site and stakeholders

The consultant team further recommends the following further design/planning studies be undertaken to develop a higher level of detail to complement this study.

Urban Design Concept Study for the Special Development Zones
Water Management Study
03 Introduction

This document provides a Master Plan for the staged redevelopment of the QEII Medical Centre. The study comprised five key parts.

1. Precinct Analysis
2. Concept Master Plan Options Study
3. Development of the recommended option
4. Consultation and review of the draft Master Plan report - recommended option
5. Finalisation and issue of the Master Plan report

The Master Plan provides a planning and design framework for the future redevelopment of the QEII Medical Centre. It facilitates the implementation of recommendations 29, 31 and 33 of the 2004 Report of the Health Reform Committee “A Healthy Future for Western Australians” (Reid Report) final report pertaining to Adult, Women’s and Children’s services in the NMAHS.

The Master planning Study considered a long-term redevelopment of the QEII Medical Centre that could ultimately comprise a total of 1200 multi-day and same day beds for Adults, Women’s and Children’s services.

Note: All Master planning options acknowledged the staged nature of the proposed redevelopment programme.

The QEII Medical Centre redevelopment envisages world-class facilities that will be a leader in clinical care, research and education. It will be patient-centred, optimise clinical efficiency and contribute positively to its surroundings.

QEII Medical Centre Master Plan Design team

The Master Plan for the QEII Medical Centre has been facilitated through DTF - Strategic Projects on behalf of the DoH and QEII Medical Centre Trust by a multi-disciplinary design collaboration comprising HASSELL in association with The Smith Group, STH Architects and Smith Hager Bajo from the USA.

The Smith Group has provided architectural and health planning advice, leadership and delivery on some of the most complex and challenging healthcare projects in the world. Smith Hager Bajo is a strategic health planning consultancy, working exclusively in women’s and children’s health management consulting and facility planning. Representatives from Smith Group and Smith Hager Bajo were on-site for extended periods during the Options Development stage.

Project Brief/background

The proposed redevelopment of the QEII Medical Centre represents a significant step forward for the restructuring and future direction of the Western Australian Health System and in particular that of the North Metropolitan Area Health Service (NMAHS). Consequently, the planning, design and construction of the new and refurbished buildings, support services and infrastructure must provide an environment that supports and enhances the development of strategic directions, service plans, models of care and workplace environments of the respective hospitals and the research and education facilities.

The Master Plan study required the team to consider a large and diverse number of underlying themes or drivers. The primary drivers are as follows.

- To be able to respond to the implications of the recommendations in the Reid Report with respect to the reconfiguration of acute hospital services across the Perth metropolitan area including:
  - the impact of the proposed change in clinical role of Royal Perth Hospital (RPH) and the subsequent opening of the Fiona Stanley Hospital;
  - the progressive enhancement of service capacity at Joondalup Health Campus and Midland Health Campus; and
  - the proposed co-location of the tertiary Children’s (PMH) and Women’s and Newborns (KEIMH) hospitals, and their associated functions, and the clear potential synergies between the respective hospitals and the potential to realise clinical and operational value.

- To respond to the Government’s commitment to having an enhanced medical research role.
- To maximize the operational and capital benefits of co-locating “like” support activities on the site e.g. central sterilising units, catering and pharmacy.
- To be able to efficiently respond to changing clinical models of care and the critical sustainability factors that are emerging from the recently completed metropolitan clinical master planning process e.g. the impact of future workforce constraints.
- To meet the teaching and training needs of the necessary growth in medical, nursing and allied health professionals, and to cater for the increase in population, particularly aged and acute.
- To be able to provide a focus of excellence in the area of research.

Objectives

The development of the QEII Medical Centre site Master Plan will facilitate the achievement of the DoH’s strategic goals for the NMAHS and build a consensus for the future direction of the facilities and their models of care. It will also assist in the development of capital redevelopment business cases and guide future stakeholders, health planning and design teams.

The Master Plan study aims to progress the recently endorsed Site Access and Structure Plan, which focused primarily on:
- External access including main entry and circulation
- Access including traffic and public transport
- Public transport and motor vehicle parking for staff, patients and visitors
- Land use and building heights and setbacks
- Connectivity across the site including the links between QEII Medical Centre and Hollywood Private Hospital (HPH)
- Interface with the surrounding community

The comprehensive site Master Plan comprises a thorough investigation of a feasible range of facility planning options that
- Provide resolution of the site requirements to facilitate the co-location of the new Children’s Hospital and the future co-location of the Women’s and Newborn Hospitals
- Provide resolution of land and buildings required to facilitate the NMAHS’s strategic plan and goals
- Describe functional areas, relationships and circulation between, and future expansion of functional areas
- Acknowledge that staging of the redevelopment will be required due to site and existing operational constraints and funding streams
03 Introduction

SITE ACCESS AND STRUCTURE PLAN

Draft Plan issue for Approval

PRECINCT ANALYSIS/
Master planning

Background Review and Site Analysis
3 May - 12 May 2006

Launchpad/Design Workshop 1
26 May 2006

Aspirations Issues
Variables

Design Workshop 2
15 June 2006

Urban Form Site Response

Design Workshop 3
11 July 2006

Articulate Opportunities

Precinct Peer Review
14 July 2006

Options Development
18 July - Aug 2006

Stakeholder Review
4 Aug 2006 /Options Analysis

Develop Preferred Master Plan Option
8 Aug - 2 Sept 2006

Finalise Draft QEIMC Master Plan
4 - 18 Sept 2006

Final Precinct Concepts

Ongoing Review and Development
2007-2009

Finalise Master Plan
2010

QEIMC
Master Plan

Health Model Research and Schedule of Facility Need Development

Functional Relationships

Design Workshop 2
15 June 2006

Test Assumptions
Review Design

Design Workshop 3
11 July 2006

WAPC Approval
19 June 2007
03 Introduction

It will provide a critical control mechanism to ensure any short/medium term objectives are satisfied in a cost-effective manner, compatible with longer term goals. The Site Master Plan study, comprising briefing, site and facility familiarisation and assessment, options development and assessment proposed was rigorous.

The options development phase and assessment was merit-based and qualitative. It was not skewed by any preference for the options.

Analysis and Planning

To achieve the highest level of architectural and urban design quality, analysis and planning was undertaken at the three levels described below.

-Campus Level: Where the placement and connectivity of various buildings was considered, including linkages to adjacent functions, activities, transport and road networks. This included the planning and articulation of the circulation systems, design philosophy, development staging and engineering servicing principles. A particular driver of this planning level was the consideration and review of the QEIIMC Site Access and Structure Plan.

-Building Level: Where the internal configuration of each building, its constituent departments and the way departments relate to each other were considered. This includes the planning and articulation of the limits of the building envelope, future expansion approach and interfaces for circulation and services connections. This level was also required to identify both separable design and/or construction packages.

-Department Level: Where the accommodation requirements, functional relationships were considered. In the case of complex clinical spaces, indicative layouts sufficient to allow practitioners to fully understand the workings of the spaces were prepared.

The Process

The Master Plan for the QEIIMC has been developed through a consultative design process undertaken in several stages throughout the period from June 2006 to September 2008. Key milestones have included the following:

-A Launchpad Workshop involving stakeholders. This workshop was the consultative basis for the review of the QEIIMC Access and Structure Plan and Statement of Facility Need and the design of a concept Master Plan.

-Health Model Research and Accommodation Brief development.

-Design Workshops where initial design options focusing on site response and functional relationships were tested by Stakeholders.

-Peer Review of a developing preferred option to test assumptions and articulate opportunities.

-Developed design workshop where the Master Plan options where presented to clinical stakeholders for comment and the development of a preferred option.

-A period of stakeholder review and consultation on the preferred option of the QEIIMC Master Plan.

-Design Development of the Hospital Master Plan.


Consultation

Consultation has been critical to the development of the Master Plan. Throughout the site Master planning process, the Project Control Group (PCG), the wider Redevelopment Reference Group (RRG) and key stakeholders were consulted through formal and informal processes. Informal meetings, discussions, walking tours of facilities, studio workshops, visioning workshops and regular PCG meetings were held throughout the duration of the Master planning process with constant feedback from all being included and incorporated into the options and assessments.

Key Stakeholder Groups Consulted

-SCGH
-University of Western Australia (UWA)
-WAIMR
-The QEIIMC Trust
-NMAHS
-MEH
-PMH
-Pathwest
-Lions Eye Institute
-Cancer Centre
-Department for Planning and Infrastructure (DPI)
-Telethon Institute for Child Health Research (TICHR)

The consultation methods used have sought to capture the information and data that was needed by the design team to produce a user responsive design.

Evaluation

A total of 12 options were developed during the options study phase. The analysis and assessment of the options utilized weighted evaluation criteria applicable to all options. It assessed how they best satisfied and/or responded to the Project Vision, the Statement of Facility Need and the Principles for the Sharing of Facilities and Services, The Access and Structure Plan and the Master Plan Design Guidelines and Principles.
Concept view towards the Great Court
**04. Vision**

The QEII Medical Centre redevelopment will be a landmark project demonstrating excellence in health care, architecture, and urban design. Key project attributes will include the following:

- A world-class facility and a leader in clinical care, research, and education, that embraces the latest scientific, technological, and medical developments.
- A facility that embraces international best practice design principles to create an uplifting and optimistic environment that is patient-centered and becomes an intrinsic part of the healing process.
- Distinguished works of architecture that contribute positively to its surroundings, the environment, and to the community.
- An operationally, environmentally, and socially sustainable development based on an integrated Environmentally Sustainable Design (ESD) design approach.

From the beginning, the Master Plan team set about establishing a list of team and, ultimately, project goals. Both were signed off by the team and presented for approval to the PCG and stakeholders at the first workshop. They became a ‘live’ list which the team refined further as the project progressed.

At all three design workshops and briefing workshops, the goals were presented and used as a point of reference for how the concepts were developing. Several ‘deal breakers’ were highlighted. These ‘deal breakers’ were considered by the team as integral to the success of the project and were the minimum achievements to be realised in the final option. They ensured that the project did not stray in terms of its outcome. It eventually became part of the process for analysing the final options.

The project goals were to:
- Develop the Master Plan to address the immediate programme needs including the co-location of the children’s hospital.
- Develop long-term Master-plan to replace all buildings.
- Develop plans for the integration of Children’s and Women’s and Newborn services with Adult services, either separately or together.
- Encourage the use of new models of care, technology and operations.
- Provide close proximity for PathWest to clinical areas – products/people.
- Maximize building density, reduce land coverage, and maximize green space.
- Develop sustainable concepts (ESD).
- Incorporate international best practice models of care.
- Ensure appropriate on-site facilities to support teaching, research, education and inpatient/outpatient clinical care.
- Provide planning strategy to allow for incremental growth and change.
- Articulate the collective vision of campus.
- History.
- Community.
- Public image.
- Patient experience.
- Family Unity/diversity.
- Cultural.
- Optimise the possible integration of a city mass transit system.
- Provide new buildings that respond easily to change, flexibility, expandability, integration of building system technologies and ESD.
- Promote workplace environment to encourage staff collegiality and staff retention.
- Explore opportunities/collaboration between QEII Medical Centre and HIP.
- Provide close proximity for research (WAIMR) to clinical space (inpatient and outpatient).
- Promote high quality design and planning principles.
- Provide close proximity between clinic outpatients to inpatient areas.
- Provide planning strategy to allow for incremental growth and change.
- Articulate the collective vision of campus.
- History.
- Community.
- Public image.
- Patient experience.
- Family Unity/diversity.
- Cultural.
- Optimise the possible integration of a city mass transit system.
- Provide new buildings that respond easily to change, flexibility, expandability, integration of building system technologies and ESD.
- Promote workplace environment to encourage staff collegiality and staff retention.
- Explore opportunities/collaboration between QEII Medical Centre and HIP.
- Provide close proximity for research (WAIMR) to clinical space (inpatient and outpatient).
- Respect for all community needs/ideals – open campus as community asset.
- Promote high quality design and planning principles.
- Provide close proximity between clinic outpatients to inpatient areas.
- Promote an improved level of communication across stakeholder leadership to achieve synergy and promote new creative ideas.
- Think outside of the box – encourage ideas.
- Encourage pride of ownership by design team.
- Provide for clinical service plan criteria.
- Ensure mental health is ideally located close to ED and Acute Services.
**05 The Site**

**Location**

The QEIMC site is Crown title and an "A" Class Reserve for the purpose of a medical centre. It is located immediately west of Kings Park and 4 km from the Perth city centre.

The site is very well situated in the context of the metropolitan road network having a frontage to Winthrop Avenue to the east, Monash Avenue to the south and Aberdare Road to the north. It is 3 km by road from the Shenton Park railway station and within close proximity to the freeway.

The University of Western Australia’s (UWA) Crawley campus is located at the southern end of Winthrop Avenue. UWA’s campus planning will see it continue to expand west to Broadway/Hampden Roads which links directly to Monash Avenue and Caladenia Crescent. Hampden Road and Broadway are retail and mixed business/residential precincts with a main street character.

To the west is Hollywood Private Hospital (HPH) which does not share strong physical linkages to QEIMC though the potential exists.

A pocket of low density (RIO), single residential housing development is situated to the north and west of QEIMC between Verdun Street, Smyth Road, Aberdare Road and Gairdner Drive. Residential development also fronts much of Monash Avenue to the south.

**Town Planning Context**

**QEII Medical Centre**

The QEIMC site is reserved for the purpose of a medical centre under the Metropolitan Region Scheme. The approval authority for any proposed development on the site is the Western Australian Planning Commission.

Consistent with their Metropolitan Region Scheme reservation, the site is also reserved for ‘Public Purposes - Hospital’ under City of Nedlands Town Planning Scheme No.2 and City of Subiaco Town Planning Scheme No.4.

**Access and Structure Plan**

The preparation of the QEIMC Access and Structure Plan formed a material part of the joint initiative between the Department of Health and the Department for Planning & Infrastructure. The objective was a site analysis of the QEIMC to allow for the recommendations proposed by the Reid Report in 2004.


The State Government released the approved Access and Structure Plan in February 2007, after a period of public comment. The Access and Structure Plan provides a planning framework that will influence the Master Plan concept. This Plan:

- provides a basis for development in line with transport orientated developments, facilitating solutions to looming transport issues shaped by QEIMC, HPH and the neighbouring cities of Subiaco and Nedlands.
- proposes access and circulation routes, building setbacks and heights that will promote suitably sized sites to enable the development of major tertiary health care and allied facilities, having appropriate scale and character of built form.
- protection of environmental values and promotion of sustainable development consistent with State Government policy and sustainable development principles.
- provides clear direction and strategies for the provision, location and management of access and parking.
05 The Site

Planning and Development Act 2005
This Act consolidates existing town planning legislation in Western Australia. It came into effect on 8 April 2006 and is the enabling legislation for the Metropolitan Region Scheme and local government town planning schemes, which govern the way in which town planning approvals are granted, including the need to make applications.

State and Local Policy
Network City: Community Planning Strategy for Perth and Peel
This stage promotes the intensification of housing, employment, retail and entertainment facilities in specific areas and corridors in order to optimise land use and to facilitate a more equitable and efficient transport system.

A diversification of land uses is required to generate the two-way movement of people required to support public transport viability. A variety of land uses that attract visitors both during and after business hours also perpetuates greater vibrancy and liveability of an area.

Hospitals are high employee and visitor attractions that are defined as 'specialised centres' under Network City. Due to the high number of trips generated by employees, visitors, service and business customers, patients and visitors, there is opportunity to provide for diversification of land uses both within the site and in the surrounding area.

The basis of the activity centre concept is the intensification of land uses around transit stops, known as Transit Oriented Development, to encourage walking and public transport patronage. With this concept in mind, increases in housing density and the provision of more retail, commercial and entertainment land uses should be considered within the walkable catchments for the proposed train station and the other transit stops proposed within the precinct.

State Sustainability Strategy
The State’s Sustainability Strategy aims to establish the framework for Government to pursue a sustainability agenda and identify actions for implementation.

The document outlines 42 priority areas for government action and is divided into six sections: Sustainability and governance; Contributing to global sustainability; Sustainable natural resource management; Sustainability and settlements; Sustainability and community; Sustainability and business.

Public sector agencies are expected to ‘lead by example’ and individually identify sustainability indices relevant to their organisation and then develop action plans to implement sustainability agendas. A sustainability Code of Practice for Government Agencies was issued in 2004, requiring all agencies to prepare Sustainability Action Plans by the end of 2004 and to report annually on implementation.

Department of Health Sustainability Action Plan
The DoH’s Sustainability Action Plan calls for the QEIIMC Redevelopment to address various aspects of sustainability. It commits to address issues such as procurement, service delivery, environmental performance, vehicles and travel, and buildings, built assets and land.

Access and Parking Strategy for Health Campuses in the Perth Metropolitan Area
The DoH has released a policy that will support a balanced transport system whilst encouraging the use of public transport to access the healthcare campuses. It will, amongst other things, relate to moving to and from hospitals and guide the provision of staff parking. It will apply to all hospitals operated by the DoH and can be adopted by private operators of public hospitals. At the time of preparing this Master Plan, the policy was under development and has since been issued in draft form during a process of consultation with the various stakeholders.

In March 2007, the Western Australian Planning Commission through its Sustainable Transport Committee supported a range of transport initiatives relating to transport planning on all metropolitan health sites. The key document is the draft Access and Parking Strategy for Health Campuses in the Perth Metropolitan Area. This requires that each hospital prepare a travel plan that includes parking management and all the usual components of a green transport plan.

The Western Australian Planning Commission expects the application of the Access and Parking Strategy for all health campuses irrespective of ownership status or operation.

Metropolitan Transport Strategy
The Metropolitan Transport Strategy 1995–2029 proposes directions for moving from a transport system that depends on cars to one in which public transport and non-motorised transport are feasible for many trips. Accessibility is the primary goal of the strategy.

The strategy is based on the principle that transport planning should encourage land use forms that promote environmentally responsible transport options. It outlines various targets, including increasing car occupancy rates and increasing the use of public transport. By 2029, the goal is to increase personal trips by public transport to 6.4% in 1991 to 12.5%, and reduce trips as a car driver from 63% to 46%.

Meeting these targets at the QEIIMC site will require careful planning in the areas of parking management, employment policies relating to transport and parking, travel behaviour, public transport provision and access, and the provision of facilities that promote alternative travel modes such as walking and cycling.

In February 2007, the QEIIMC Access and Transport Plan Report was completed and recommended that a further detailed public transport Master Plan to be developed. This plan has been completed and the Master Plan will be developed. The QEIIMC site and facilities.

Western Australian Planning Commission
Development Control Policy 1.5 – Bicycle Planning
This policy aims to make cycling safer and more convenient for users; to ensure that adequate planning for cyclists is undertaken; to encourage the use of bicycles as an alternative to private motor vehicle use; highlight the benefits of cycling; and to ensure adequate provision of cycling facilities is considered in statutory planning processes.

Development Control Policy 1.6 – Planning to Support Transit Use and Transit Oriented Development
This policy aims to encourage the integration of land use and transit facilities and will be applied by the Commission, inter alia, when reviewing structure plans for developing areas and areas undergoing redevelopment. The principles highlighted in the policy are equally applicable to major activity centres like the QEIIMC and to other forms of urban redevelopment - in particular, the need for land use to support effective transport systems by making them highly accessible to potential users through the appropriate arrangement of movement networks and the placement of land uses.
05. The Site

Views into the site

The primary views into the site are from Winthrop Avenue to the east. The existing central plant building (Block H) significantly impacts upon views to the eastern elevation and approach to the site. Secondary views into the site are from the residential developments to the north and south of the site and Rosalie Park to the north. The site and SCGH (Block G), in particular, are all highly visible from surrounding elevated areas, and high-rise buildings and, from the air, it dominates the landscape. The site’s very broad exposure to Winthrop Avenue, Monash Avenue and Aberdare Roads offers significant opportunity to enhance the public face of the campus. Careful consideration to detailing and layout of visitor parking structure fronting Winthrop Avenue will be required.

Views Out of the site

SCGH G Block, being the tallest building on site, affords excellent views of Kings Park and the city to the east, as well as UWA, the Swan River and South Perth to the south and east. Substantial future development should seek to maximise the outlook to surrounding landscape and views through good orientation and the provision of generous view corridors.
The QEII Medical Centre site has several natural and man-made landscape assets. Kings Park, which bounds the site to the east, provides an abundant amount of visual relief across the site and should be taken advantage of where possible. Rosalie Reserve and the Water Corporation stormwater compensation reserve along Aberdare Road will provide good outlook for buildings to the north of the site. To the south of the site the remnant land provides a natural setting for development to the south and along Monash Avenue. The forecourt of the original Perth Chest Hospital (A Block) and the subsequent internal courtyards that have developed within and between several of the buildings, provide good visual relief for the current staff and visitors. These assets have the potential to be key drivers and elements that should be developed, encouraged and enhanced within the Master Plan.

Apart from the obvious bounding of the site by Kings Park and Rosalie Reserve, the QEII Medical Centre site has substantial hard and soft landscape assets. In particular, the remnant bushland (Monash Avenue), the Water Corporation stormwater compensation reserve, the forecourt to the original SCGH entry and the internal courtyard structure are potential ‘key drivers’ for the development of a significant ‘enlivenment’ supporting the functional activities on site.

In accordance with the recommendations made in the draft Access and Site Access and Structure Plan, further heritage assessments were undertaken (see Appendix 1) to determine whether Blocks A and R were of significance warranting heritage listing. In August 2007 the Heritage Council of Western Australia approved an application by the Department of Housing and Works to demolish Blocks A and R.
05___The Site

Distance

The walking distance from Watling Street at G Block (which approximates the ‘centre’ of the site) is three to four minutes from the middle of the site. This falls within international benchmarks for the movement of staff and visitors within a healthcare facility without the need for transport or aide.

The ability and ease of pedestrian movement within the site should be maintained and enhanced.

Central Plant/Service

The existing central plant is positioned at the front of the site and feeds west to facility management and workshops via basement and sub-basement tunnels. This tunnel system also runs north-south at three levels (ground, basement and sub-basement) and links most of the buildings on the site to each other and to central plant. A new central plant facility will be located to the western portion of the site, providing expanded, modern services capability that will support existing and proposed future buildings. The Western Power substation to the south-west of the site, along Monash Avenue, is a district substation and will require upgrading to complement the redevelopment. This provides a discrete movement network for services, stores, supply, engineering and staff away from the upper Watling Street level which is more public-oriented.

Service deliveries and loading occurs south of Cancer Centre Stage 1, off Gairdner Road and at G Block, below the Emergency Department at Hospital Avenue.
The Water Corporation mains serving SCGH and Nedlands run north-south directly under Hospital Avenue. They comprise a significant investment and design parameter/asset due to their high level (approx 500mm), size and distribution. Electrical and IT cabling runs east-west and north-south in the service tunnels that connect central plant to V and T blocks in the west and the buildings along Watling Street. Medical gases and steam are supplied from central plant and also run along the service tunnels to the rest of the site.

Water and sewerage mains servicing QEII Medical Centre and Nedlands run north-south directly under Hospital Avenue. They form a significant asset for the infrastructure planning of the site.

The main service routes for entering the site are Hospital Avenue via Monash Avenue and Aberdare Road, and along Gardner and Verdun Streets to loading docks at B Block, and Blocks T and W and south of G Block. These then link into the tunnel system, or many on-grade service paths and access roads that permeate the site.
The QEIIMC site is serviced by the public transport bus route which runs along Hospital Avenue from Aberdare and Monash Avenue. There are four bus stops along this road and there is a bus roughly every one minute at peak times. In addition, there is a taxi stand opposite the main entry to G Block and the Emergency Department.

Access Vehicular
The arterial roads that bound the site feed into the main thoroughfare through the site. The main public entries are from the north and south and Hospital Avenue. The main entry from UWA is south at the Hampden Road termination, and the southern end of Hospital Avenue.

Secondary entries can be accessed along Gairdner and Verdun Streets, and Caladenia Crescent and Banksia Street.

Existing Parking
The primary visitor parking is at the front of the site between Hospital Avenue and Winthrop Avenue north of H Block. Staff parking is allocated south of H B Block between these streets, and west of the site between Caladenia Crescent and Hampden Road. A lack of parking has resulted in staff often using visitor parking.
05 The Site

Existing Facilities And Service Analysis

In April and May 2006 the consultant team carried out the:
1. Infrastructure Condition Report
2. Existing Building Condition Audit

This work was undertaken concurrently with Access and Structure Plan study to assist the Master Plan team in the following:
- Determining the adequacy of existing site and support infrastructure to meet projected demand arising from the forecast growth of SCGH services and increased accommodation as a result of the early relocation of the Children’s Hospital and the future relocation of the Women’s and Newborn Hospital.
- Ascertain the feasibility and suitability of existing buildings to continue existing service provision and/or to suitability accommodate alternate service functions. The building condition audit ranked building fabric, structure (including dimension) and service infrastructure up to the building perimeter to ascertain an overall ranking for future use as clinical or non-clinical use.

During the course of the preliminary Master Plan, the team also carried out ‘expanded’ audits on Blocks J and K (pathology), H (central plant) and E (ambulatory care) given the increased potential of high level and re-use/refurbishment.

Copies of the audits can be found at Appendices G and H.

Key issues pertaining to existing services infrastructure and building configuration and condition that were seen as influencing and/or impacting upon the Master Plan development were:
- existing infrastructure services to the site with the exception of electrical HV/ supply have the capacity to support forecast growth
- electrical HV supply must be upgraded, requiring substantial redevelopment of the existing district/zone substation.

Upgrading requirements include the need to construct ‘new’, contiguous with existing: an area of approximately 80m x 40m.

A Block was ranked as being unsuitable for any future re-use as its plan configuration, structural grid, internal planning and construction type do not support current and future operation models and demands. Structural and façade repairs and maintenance costs are considered excessive.

A major sewer in the current alignment of Hospital Avenue would be difficult and expensive to relocate and should be retained in its current location. This would not preclude building over parts of the alignment, subject to compliance with relevant authority guidelines.

The existing service tunnel network is a major asset that should be retained.

PathWest – G Block (80,000 square metre) is a major asset in good condition and suitable for refurbishment, and long-term retention.

The existing Water Corporation compensating basin is at capacity however, site development should not result in additional loads on this facility building configuration, structure and servicing are considered outdated and inadequate to support either refurbishment or redevelopment for long-term alternate use.

J and K Blocks are approaching 35 years of age and nearing the end of their economic life in terms of their current functions (PathWest).

H Block (central plant) is currently larger than it need to be. It can be upgraded and reduced in size or relocated to a position more suitable for the redevelopment when equipment upgrading or replacement is required to be undertaken; and

_E Block was concluded to be suitable for refurbishment for similar functions of ambulatory and allied health services. The structure has been designed to allow an additional floor if necessary and the cost to refurbish these “soft” spaces would not appear prohibitive. It is not a heavily serviced building and most of the services have approximately 5 – 10 years service life left.

Summary of Existing Building Audit

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<tr>
<th>Ranking Legend</th>
<th>Description</th>
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<tr>
<td>A</td>
<td>Building acceptable for current use/clinical/non-clinical</td>
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<tr>
<td>B</td>
<td>Building acceptable for any high end use</td>
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<tr>
<td>C</td>
<td>Building acceptable for any use other than high end</td>
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<tr>
<td>D</td>
<td>Building unacceptable for any use (demolition)</td>
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The ongoing review of siting options for the Children’s Hospital has resulted in the confirmation of its location between Hospital Avenue and Winthrop Avenue. This site presents an opportunity to accommodate the increased area and create a contemporary Children’s Hospital suitable to incorporate sound planning and best practice clinical standards. The main attributes of the site include:

- Increased site area allowing creation of a Children’s Hospital incorporating best practice design and clinical standards
- Opportunity for increased level of amenities (e.g. courtyard and circulation)
- Permits a more functional building footprint
- Possibility to allow more appropriate access to main entry of Children’s Hospital, including a recognisable and prominent ‘front door’
- Possibility to allow more appropriate direct access to emergency department
- The Children’s Hospital will become more prominent and visible on the QEII Medical Centre site
- Conforms to the Structure Plan
- Does not involve significant demolition of any clinical buildings
- Opportunity to provide link to existing SCGH and future woman’s hospital facility
- Opportunity to provide more appropriate ‘back of house’ facilities
- Opportunity to help resolve existing support services issues by providing an increased basement area and ability to consolidate and expand support services such as stores, linen, waste and catering
- Fits in with site service infrastructure (i.e. mechanical and electrical services)
- Provides a closer and more direct access from car parking to the hospital, Visitor carparking at lower levels simplifies wayfinding and reduces travel distances
- Allows a direct drop-off at front door (car, bus, taxi future light rail)
- Provides more sympathetic urban planning and the opportunity for outlook towards Kings Park
- Overall car parking strategy can be easily maintained

Does not compromise the overall master planning strategy (e.g. can still utilise L, M and N Blocks)

Facilitates excellent disaster planning

Road entry points on the existing Structure Plan can be retained

Maintains strong connectivity with TICHR

Help create a facility that would actively support attraction and retention of high quality, committed hospital staff

Promote a flexible design and infrastructure capable of adapting to new technologies (clinical and information) and emerging trends in paediatric healthcare, changes in clinical practice and models of care, and changes in government policy, legislation and standards

The new site is less constrained by surrounding buildings which facilitates better access to external spaces and better control of vehicle access for public, service and emergency vehicles

Less over shadowing from adjoining buildings

Better outlook towards Kings Park

New location does not lose connectivity opportunities in the future with the relocated women’s hospital

Supports the main site service infrastructure from the relocated central plant, providing an opportunity to complete a “loop” for site services

Locates a major health facility building on a prominent part of the site fronting Winthrop Avenue rather than parking infrastructure

Provides greater expansion opportunities in the long term for SCGH to the south

By virtue of its size and location this site is capable of supporting a larger hospital footprint if necessary, providing greater flexibility in the design and planning of the proposed new hospital

Facilitates an earlier start on site as there is less reliance on de-canting and re-location of existing facilities to accommodate the new children’s hospital

05. 10.2010

QEII MEDICAL CENTRE_SITE PLAN
The proposed redevelopment of the QEIMC represents a significant step forward for the restructuring and future direction of the Western Australian Health Services. The expansion of existing Adult, and the development of new tertiary level Children’s and in the future Women’s and Newborn health services, and facilities on the site will establish the QEIMC as one of the major tertiary referral centres for all Western Australians.

The QEIMC will be a leading centre for research and education. It’s clinical facilities will provide a comprehensive range of medical and surgical specialties. In addition, it will provide a number of quaternary services as part of its state-wide role including heart and lung transplant, neuroscience and major trauma services. Critical to the success of the proposed QEIMC redevelopment will be the ability of the concept to deliver a high level of clinical functionality and efficiency.

In parallel with the facility requirements to provide high levels of functionality and efficiency, is the appropriate provision of clinical and supportive accommodation. The Master Plan for QEIMC must embody the following key objectives to ensure that the objectives to deliver a world-class facility are achieved. It must:

- be flexible and adaptable to future change in demographics and epidemiology, nursing protocols, medical care developments and technological advances
- be fully enabled to support the potential offered by integrated ICT and emerging medical technologies
- provide a world-class teaching facility

Statement Of Facility Need

A Statement of Facility Need was prepared by STH Architects prior to the commencement of the Master planning study to provide the Master Plan design team with a high level estimate of the likely service needs, corresponding space requirements and key physical/locational relationships of each of the major redevelopment components to be considered in the Master Plan study.

The statement and schedule were prepared after a series of preliminary consultations had been undertaken with the representatives of the major stakeholder groups. It did not extend to detailed discussions with individual clinical stakeholders and their facility specification. It thus cannot be interpreted as achieving a fully resolved and signed-off project brief, reflecting proposed operational models and clinical service plans.

The identified stakeholders represented in the Statement of Facility Need are as follows:

- SCGH
- UWA
- PathWest
- Research Institutes (including WAIMR, Lions Eye, TICHR, and Neuromuscular Research Centre)
- Cancer Centre
- DOH (Radiation Health)
- Niche Association
- A range of retail tenancies within SCGH
- The Women’s Hospital (KEMH) including associated academic, research and patient support services

- The Children’s Hospital (PMH) including associated academic, research and patient support services

Health (Hospital) Services

The provision of health services at QEIMC will cover a diverse range of adult and children’s specialties, patient cohorts, occurring in a variety of settings, either as a single episode of care or as an ongoing care process.

Research

A Memorandum of Understanding establishing a new Biomedical Research Centre that will bring together all major research entities on the site to maximize the associated synergies and benefits under the management of the Western Australian Institute for Medical Research has been signed. Whilst some research will be integrated within the clinical areas of the Hospitals, a policy to develop an integrated research precinct for all research and education activity, separate from the clinical areas, has been established. The research precinct will include:

- The Western Australian Institute for Medical Research (WAIMR)
- Lions Eye Institute
- Neuromuscular Research Institute
- The University (UWA) Department of Medicine
- School of Paediatric and Child Health (SPACH) – subject to PMH co-location
- Women’s Medical Research Foundation – when the Women’s and Newborn Hospital (KEMH) is relocated

Education

In conjunction with clinical services and research, the QEIMC site is a major provider of tertiary educational services to health professionals. Long-term planning indicates a requirement for significant upgrading and future expansion of the QEIMC facilities to meet the needs of an increasing student population and a need to replace existing inadequate accommodation. The incorporation of the expanded facilities within and/or adjacent to the ‘research precinct’ will ensure key planning relationships, laboratory functions and services, research, academic offices, teaching and clinical areas are maximised.

Decentralised facilities for activities such as group lectures and tutorials are to be provided within clinical areas.

Pathology (PathWest)

An increase in metropolitan and state-wide service requirements to meet increased demand from expanded Hospital services, coupled with an urgent need to upgrade ‘aged’ and inappropriate existing facilities, requires the complete replacement of PathWest’s accommodation. To achieve improved functional relationships replacement facilities must be located with core ‘Hospital’ functions and education functions.

Infrastructure Services

Opportunities for the rationalisation and upgrade of the infrastructure services on, and to, the QEIMC site are a high priority. Upgrading to meet increased demand will have to occur both capably and location of infrastructure services to ensure that adequate electricity, drainage, communications and IT services, chilled water and steam and waste collection are available for future development. Assumptions from the Access and Structure Plan to be considered include:

- the expansion and/or upgrading of ‘Western Power switch yard’ facilities should be located in a ‘low value’ area
- that does not compromise the optimal arrangement of buildings, open spaces and movement routes
- plant and service infrastructure should be screened from view from outside the site and from high amenity areas within the site. Such sites should be planned and located to minimise impact upon visual amenity, and to meet long term master planning objectives.

Project Precincts and Functional Organisation

The redevelopment envisages three distinct operational precincts:

- Hospital facilities - the Adults, Children’s and future Women’s Hospital (incorporating retail)
- Research facilities (incorporating WAIMR, ICHR and Lions Eye Institute and UWA)
- Education facilities (incorporating Universities)

Hospital Departmental Planning

General

The following general planning principles are to apply:

- Access to each department should not require travel through an adjacent department.
- Overall department planning and adjacencies are to provide allowance for the separation of visitor and staff/ operational requirements.
- Logistical distribution of food, consumables, equipment and services should not be undertaken through public and visitor spaces and primary access routes.
- Security and building service isolation will be provided for each department.
- This may allow for:
  - Decontamination in the event of a bio-hazardous contamination or hazardous materials spill
  - Post - disaster operation
  - Separate operation requirements
  - Fire and emergency response should not require paths of travel across adjacent departments

Functional Planning

The following key functional design principles must be incorporated to ensure a robust framework for the design of core services and departments.

- Consequent adjacencies with pathology and CSSD services.
- Diagnostic Imaging
- Direct and rapid movement of patients to emergency and intensive care services.
- Direct and discrete inpatient movement between operating suite, diagnostic services and rehabilitation services.
- Planning and area allocations to facilitate development of new models of care and the design of generic inpatient accommodation units to meet current Australian design standards and future service change.

Operating/Interventional Suites

- Direct and rapid movement of patients to the operating suite, emergency and diagnostic services and emergency services helicopter.
- Planning and area allocations to facilitate development of new models of care and the design of generic inpatient accommodation units to meet current Australian design standards and future service change.

Ambulatory and Outpatient Services

- Direct and clear access to visitor parking.
- Consequent adjacencies with diagnostic imaging and pathology services.
- Direct and convenient access to operating and interventional suites.
- Consequent adjacencies with clinical offices.

Diagnostics

- Direct and rapid movement of patients to emergency and intensive care services.
- Direct and discrete inpatient movement between operating suite, diagnostic services and rehabilitation services.
- Planning and area allocations to facilitate development of new models of care and the design of generic inpatient accommodation units to meet current Australian design standards and future service change.

Emergency

- Efficient traffic separation of emergency service and public vehicles.
- Direct and rapid movement of patients to the operating suite, intensive care unit, diagnostic services and emergency services helicopter.
- Adjacency to Hospital entrance and visitor parking.
- Consequent access to pathology and other services.
Flexibility, Adaptability and Expansion

The Department of Health has a long history of responding to and creating change through clinical practice and research.

Design principles that will ensure flexibility and expansion of the redevelopment of the QEIMC include:

- The provision of architecture, planning and building services that respond to the changing modes of clinical delivery and technologies; and
- The provision for change and future expansion in critical zones without causing disruption or compromise in the operational efficiencies of any adjacent zones.

The Master Plan requires detailed consideration of flexibility, adaptability and expansion for all precincts.

Consideration is to be given to the following:

- Buildings that allow for both horizontal and vertical expansion including the incorporation of shell and core space; and
- Departmental planning allowing for internal changes and minimal disruption to ongoing operation. Areas of priority: Allowing for perimeter 'soft space'; expansion
- Major areas of immovable plant, egress, stairs, shafts and operational facilities to be located in positions that will not affect changes of configuration
- Allowing for additional capacity in building service plant rooms, risers and ducts to accommodate additional building and technology services
- Plant and building services located to allow for access, future changes and additions without affecting ongoing operation of the facilities

Internal Circulation and Spatial Organisation

The internal organisation of the campus, precincts and facilities must be based on a legible plan that is easy to understand with intuitive way finding. The principles of internal planning relationships should derive from and support the operational policies.

The circulation pattern should be clear and transparent to impart an order to the complex organisation of the various departments. It should be planned around a main organisational element that will become the ‘heart’ of the Hospital. Areas of common usage should be treated as focal points within the facility.

Patient travel distances must be minimised. Direct access should be provided to all clinical units so that patients, visitors and staff do not have to pass through other clinical units to gain access to a destination unit.

The main entrances to the Hospitals and allied facilities must be clearly visible from all vehicle access roads, public transport serving the site and adjacent residential and commercial precincts. Access at ground level(s) is required for the main Hospital entrances and the emergency departments, which will also serve as the after-hours entrances. Planning should ensure that lobby, reception and waiting areas are light, bright, easily identifiable, spacious and centrally located in relation to all functional units.

The layout should attempt to separate inpatient and staff flows from outpatient and visitor flows. Circulation allowances and planning must be sufficiently generous to allow full accessibility and ‘barrier-free’ design for all users. Public traffic routes must not be through operational areas.

Within departments, the internal spatial organisation must allow the planning to achieve maximum access to sunlight, external views and outdoor spaces. Allocations of departments on each floor must allow the efficient delivery of the respective facility model of care.

Operation. Ambulatory care units are to be located in positions that will not from all vehicle access roads, public transport serving the site and adjacent residential and commercial precincts. Access at ground level(s) is required for the main Hospital entrances and the emergency departments, which will also serve as the after-hours entrances. Planning should ensure that lobby, reception and waiting areas are light, bright, easily identifiable, spacious and centrally located in relation to all functional units.

Safe and easy access must be provided to and from car parking areas for visitors and staff. Service, delivery and waste management routes should be clearly established from the loading dock to all areas of the building.

The design must provide access for staff and patients to outside areas and maximise the use of natural light for patients and staff. Use of natural light is to be prioritised for patient and staff areas.

All public areas should have a zone for artwork and provide a connection with history through the provision of historical artefacts and displays. The social features within the building should be discreet and not overt.

Interior Design

The underlying philosophy for the interior design is the establishment of a ‘patient and family friendly’ environment, where the needs of patients and their families are met with friendliness, safety, delight and privacy when appropriate, in addition to keeping with the vision of the respective Hospitals.

Clear design principles should be carried throughout the facilities in a consistent, cohesive manner.

In recognition of the role the Children’s Hospital has for the future of care to children and its responsibilities to the community, the design of the Children’s Hospital must respect the special needs of children and the sensitivities of the multi-cultural children/family and staff of the Hospital, and provide a comfortable and welcoming environment for all its visitors.

In addition, when relocated, the Women’s Hospital (as the pre-eminent provider of care specific to the needs of women) should reflect a design that celebrates the special needs of women, their families, cultural and religious beliefs including those of the staff and visitors.

Emphasis should be paid to the clarity of circulation patterns, demarcation of departments and articulation of public spaces.

Patient waiting areas should be located to maximise natural light and outdoor views.

The Master Plan will consider the provision of staff areas with equal importance as patient areas.

Security, although required, will be dealt with as unobtrusively as possible. The concept of ‘invisible security’ should be explored within feasible limits.

The overall result should be of a non-institutional, friendly character that gives patients and families, public and staff positive surroundings in which to experience healthcare.

Way-finding

The Master Plan requires detailed consideration of way-finding and signage following the following objectives:

- Provide efficient and effective guidance around the QEIMC site with improved amenity for patients, visitors and staff
- Be fully integrated with each development stage in planning, design and construction phases

Give a clear identity and character to the Hospitals and other buildings and be sympathetic to architectural and interior design

Comply with all relevant requirements in legislation, government ordinances and policies

Provide a clear identity for all users of the facility, including persons with disabilities

Provide durable, vandal resistant and minimal maintenance materials and elements

Guidelines and Principles

Project Vision and Design Principles

The redevelopment will need to carry forward the support of the community, the values of the past and the hopes of the future. To do this it will need to respond to a variety of qualitative issues, as well as the normal rigours of function and efficiency and clinical excellence.

A number of key qualitative issues, as set out below, has been identified as the result of engaging specific clinical stakeholder and user groups in visioning workshops, which were designed to draw out the important issues. The user groups included senior medical staff, nursing staff, and senior allied health professionals.

Public Image

Public image is important for the maintenance of the public’s confidence in the Hospitals, and it is important that the image is one that is welcomed by the community. The image will be created in many ways, from the macro to the micro and should be an influence on all design decisions.

Family Focus

A comment made during the visioning workshops was that the care is provided as an input to the patient and, quite often, the family members can be quite numerous. Models of care recognizes that the family’s wellbeing is a major factor in the provision of care for the patient are paramount. The visioning workshops identified the following key issues:

- Family life must be able to continue
- The differing needs of family and the patient: sleep, privacy, bereavement, eating, entertainment, exercise, education, information, socialising, supporting, short stays, long stays, proximity, isolation
- Allowing clinical functions to operate effectively while recognising that family are part of the healing process

Recognising the different types of waiting

Unity and Diversity

While the Adult, Women’s and Newborn and Children’s Hospitals quite clearly have specific images as special places for the care and healing of their patients, they are made up of many differing parts and activities. The design of the campus needs to support the diversity, while also communicating a consistent message about the core values and purpose, which motivate them and those who work there.

The following key issues were identified:

- Research and teaching are very important contributors of their reputations
- The staff who work in various places need a common place to support their services
- The staff need the ability to have “time-out” from the intensity of caring for the families of the patients
- Because of the diversity in ages, needs, culture, race and religion, there is the need for a high degree of flexibility
- The nurturing of collegiality needs shared places

Green and Open Space Integration

The setting of the QEIMC provides an opportunity for amenity for the Hospitals and its users, while also respecting the surrounding environment.

There is substantial evidence that natural settings assist the healing process, and it is suggested that the setting will take advantage in this regard. The following key issues were identified:

- Building siting, massing and orientation to maximise views to and from Kings Park
- There should be a distinction between public and staff, clinical and non-clinical
- There is the need for a ‘backyard’ for exercise, recreation, ball sport, barbeques
- There is the need for reflective and memorial gardens
- Day and night use should be possible
- Optimise distant views
- Safety and security are most important

Some gardens will be looked at from above
06___Health Facility Requirements and Modelling

Culture
Distinct from the need for an appropriate public image, the design of the new facilities must also support the culture, which is the result of the history and ethos of the way in which the Hospitals operate. The ‘look and feel of the place’ should be a direct reflection of the culture, and it is to be expressed through quality and integrity. The visioning workshops identified the following key issues related to culture:

- The facilities have pride, are successful, and enjoy an international reputation
- The site comprise facilities where the community is welcome
- The facilities are one in caring, giving, pioneering and invention

Focused Design Principles
Integral to the facilities vision and mission is the provision of patient and family focused care. Holistic care of the patient and family unit is a fundamental model of care principle and will guide the design to:

- Minimise separation of the patient from his or her families;
- Encourage and enhance patient and family access to information and support;
- To provide a healing environment that fosters patient and family choice
- To utilise evidence based design solutions that minimise the families’ disruption and maximise comfort for the patient and their family
- To utilise technology and innovative solutions to enhance the experience of care, communication and collaboration
- To provide environments that welcome, comfort and celebrate the diversity of patient and families served
- To provide access to and knowledge of leading research and care options to the patient and families
- To maximise the provisions of services to the patient and family in single locations to minimise disruption and travel
- Maximise the enjoyment of the patient journey so as to minimise the duration of the healing process

Architectural Principles
The redevelopment requires a design that responds to the patient, staff and community expectations of Western Australia. This project will provide a positive contribution to the urban fabric of Nedlands and Subiaco and Perth itself. The principles that guide the architectural design are to:

- Provide interior and exterior architecture that reflects evidence based planning and environmentally sustainable design solutions
- Create welcoming spaces, areas of interest, calm and normality promoting wellness and care to the patients visiting and using the facility
- Provide an environment that responds to the needs of the patients and family in terms of healing, comfort, privacy, access and entertainment
- Achieve an architectural expression that reflects a world-leading standard of healthcare, research and education
- Achieve legibility of address and identity
- Achieve legibility of the building’s functional operations
- Ensure that natural light permeates the building
- Use natural light as a medium for cognitive way-finding
- Adopt materials of texture, colour and pattern, which evoke patient and family friendly interior spaces
- Achieve a level of quality of materials and finishes which support the vision and the function of the Hospitals
- Achieve an urban design which responds to the significance of the site, its setting, and its context in the cities of Subiaco and Nedlands

Implementation Program Timeline
The stage 1 construction timeline of the redevelopment is detailed on page 36.
07 Access and Structure Plan Analysis

In November 2005, DHV, on behalf of the DoH, initiated an access and structure planning process to provide for the future development requirements of the QEII Medical Centre. The basis for the structure plan stemmed from the implementation of health reform initiatives identified in the Reid Report and the WAPC agreement to develop a structure plan that incorporated parking management and access plans that could be used to assess the implications of future development.

The intention of the site structure plan is to create a framework for the future Master planning of the site, to outline measures to be put in place to minimise the impact of development on surrounding areas, and to outline transport, access and parking measures that will have to be implemented in association with ongoing development.

Following a rigorous consultation with stakeholders, and background investigations and studies of the structure plan, several key recommendations were presented:

1. Prepare a public transport Master Plan to develop the required infrastructure and operational requirements for a future public transport system that will service the needs of QEIMC, together with the future needs of HPH. The public transport Master Plan should identify timing and funding requirements and be developed at the same time as the QEIMC Master Plan.

2. Prepare a parking management plan as the basis of an agreement between DoH and the WAPC, setting out the specifics of parking allocation, pricing, funding, staging and contributions, and other relevant matters.

3. Widen Thomas Street between Kings Park Road and Wellington Street to create additional lanes for transit and priority into the city.

4. Ensure that detailed site planning keeps options open for alternative forms of public transport (in addition to busses) to service the site in the longer term.

5. Prepare a full heritage assessment of A Block for referral to the Heritage Council.

6. Review the appropriateness of existing planning controls in the surrounding areas in view of the combination of planned redevelopment of QEIMC and UWA (cities of Nedlands and Subiaco, DPI/WAPC).

7. Revise the structure plan in response to Master Plan proposals.

Prior to commencing the Master Plan options study the design team undertook a review of the structure plan and determined a number of key design drivers resulting from the key recommendations of the report. These include:

- A ten-storey height limit around centre of the site and S Block
- A tapering of building heights towards the perimeter with seven storeys to Winthrop and four storeys adjacent to residential areas
- The retention and introduction of areas of green open space and high degrees of movement and visual connectivity
- Landscaped setbacks to the site perimeter
- Perimeter development precincts to the north along Verdun Street and south along Monash
- Maximise potential shared uses and synergies with HPH where possible
- Major access point to the site mid-way along the Winthrop frontage with the incorporation of a transport hub
- Secondary access points to the site at Hospital Avenue, Hampden Road and between the existing controlled intersections for Winthrop Avenue and the new major entry
- Parking structures for visitors and short stay to the front (east) of the site and long term/staff parking to the rear (west) of the site
- Allowance for an entry and exit to the site for a major public transport route to the north east corner and Hampden Road
- Retention of the existing internal movement network
- The extension of Hampden Road character and activities into the site

Commercial and external presentation usage to the eastern frontage between Winthrop Avenue and the proposed car park precinct

Design Aspiration

The design team’s analysis led to the development of several aspirational precinct objectives to guide the Master Plan development.

- Winthrop and Hospital Avenue precinct
  
  - Introduce health related commercial and retail uses to activate Hospital Avenue at street and first floor level
  
  - Ensure development promotes public transport initiatives
  
  - Create an ‘urban edge’ to Winthrop Avenue/Kings Park Road, West Perth
  
  - Hospitals precinct
  
  - Maximise opportunities to determine building height and orientation appropriate to building function and adjacent land use
  
  - Use height and built form to establish landmark features to assist in way-finding
  
  - Establish high density and entry around the transport node
  
  - Establish main pedestrian linkages connecting the existing Watling Street link with the transport and visitor parking facilities
  
  - Research/Education Precincts
  
  - Ensure a high level of connectivity with acute hospital services
  
  - Ensure the ability to present strong image and presence
  
  - Reflect linkages with UWA

Reference Image: Structure Plan

File Path: F:\pro\arc\04\PPA0408\12 Inspections Reports\QEIMC_MasterPlanExeSum Folder\QEIMC_MasterPlan
Concept view towards Sir Charles Gairdner Hospital main entry. The proposed ambulatory, diagnostic and treatment services are to the right.
**08 Master Plan**

**Recommendation**

The Master Plan design team and the QEIIMC POC, through the facilitation of DoH and DTF - Strategic Projects, recommends to the QEIIMC Trust the adoption of this Master Plan to guide the future redevelopment of the site, services and facilities. The proposal delivers a balanced approach that marries the provision of complex clinical and support functions, and the requirement of a staged implementation programme. It has the potential to deliver a high quality contemporary design based upon international experience and research ensuring that facilities and services at QEIIMC can reach their full potential as a ‘world-class facility’. The Master Plan defines a response to the many diverse yet complimentary goals and objectives for the project. The key attributes of the proposal are summarised below.

**Key Attributes And Characteristics**

**Site Organisation**

- Establishment of a stronger planning and organisational framework that responds to structure and urban design planning principles which acknowledge the increased scale, diversity and activity of a revitalised and expanded campus; facilitating a high level of integration with the cities of Nedlands and Subiaco.
- Development of a site access, traffic and parking strategy that facilitates clear way-finding, traffic separation and the incorporation of a dedicated public transport zone.
- Creation of distinct service driven planning zones for the Hospitals, research and education with provision for, and opportunity to, develop and promote identity.
- Increased utilisation of available land area allowing the proposition of special development zones fronting Monash and Winthrop Avenues, promoting a significant opportunity to create a new urban frontage to the site.

**Operation and Functionality**

- The planning facilitates the construction of a substantial ‘new build’ maximising the potential to design inpatient and care environments to meet the specific needs and functions of all Hospitals, support facilities and allied services and functions.
- The co-location of the Women’s and Children’s Hospitals are afforded the maximum opportunity to develop optimum ‘models of care’ and identity.
- The siting of the Women’s and Newborn, Children’s and SCGH Hospitals allows the co-location of the three Hospitals separately or together.
- Ability to locate ambulatory, operating and interventional services on single (hot floors) levels affording improved service efficiency, minimising duplication of support services and improved patient/visitor way-finding.
- Provision for clear east to west circulation routes through the site.

**Constructability/Implementation**

- Establishment of a framework for a structured staging program that can respond to changes in service, program and budget strategies.
- The development of the Children’s Hospital and future Women’s and Newborn Hospital can be staged independently or together.
- The development of the Children’s Hospital can be commenced at the earliest possible stage taking in to account the phasing of the SCGH redevelopment.
- Provision for change and future expansion in critical zones, minimising disruption or compromise to the operational efficiency of adjacent facilities and services.

**Facility planning focused on a change in the service provision to a stronger ambulatory model.**

- Creation of a ‘quality’ workplace to attract, train and retain staff, and a collegiate work environment with opportunities for professional and personal development and interactions.
- Provision of an uplifting and optimistic environment that is patient centred, and an intrinsic part of the healing process.

**Legend**

- OS Open space
- H Hospital
- R& E Research and Education
- SD Special development zone
- CP Multi deck parking station
- HRA Health related services and support
Circulation and Access
Staff travel distances have been kept to a minimum, whilst maximising opportunities for informal meetings, interaction and collegiate discussion to occur.
Major travel routes will afford views, appropriate lighting and natural way-finding.
Planning of major transport and movement routes for patients allowing for separation from public and visitor circulation to maintain dignity and privacy.
In-patient accommodation and in-patient clinical treatment zones have direct access so that patients, visitors and staff do not pass through other in-patient units and/or public spaces to gain access.

Context and Connection
A generating principle of the Master Plan is that primary circulation routes and connections within the Hospital, at the micro scale form a number of connections at the macro scale; facilitating the development of linkages and opportunities for future relationships and activity within the adjoining commercial and residential precincts of the Cities of Nedlands and Subiaco. Key linkages with the Master Plan include:
Potential for strong links to HPH
Extension of the Hampden Road alignment into the QEIMC site
Coherent road, pedestrian and cycling networks, and connections to public and semi private spaces
Strategic location of opportunities for facilities such as medi-hotel, child care, private providers, office and wellness centres to act as catalysts for the future development and activity
Promote retail opportunities, particular along key connecting routes and major entrances

Civic Presence
The design of built form and environment has a number of different roles to perform. Key entry points are proposed emphasising the civic importance and gravitas of the facilities, without being confrontational or of an inhumane scale. Buildings are envisaged as having a materiality and scale that responds to their use and community significance.
Key aims of the Master Plan include:
The height, form and arrangement of buildings consider views and appropriate transition and activation to Winthrop and Monash Avenues and Aberdare Road frontages
 Provision of a diverse range of usable public spaces
Establishment of broad and open guidelines to encourage a high quality of redeveloped and future development;
Provision of a physical representation of the facilities position as a centre of excellence
Public amenity

Community
The QEIMC Master Plan seeks to dispel the concept of an isolated, self contained community that exists today. Acknowledging user needs and demands to access services and facilities beyond the traditional scope of health care briefs, the Plan sets out a number of opportunities to create an environment where social and work based interaction and activity is actively encouraged. Similarly the Plan seeks to enhance public amenity and services available to the immediate community.

Special Development Zones
The Master Plan, through the process of determining site, functional and organisational arrangements, proposes higher levels of site utilisation resulting in considerable land area fronting Winthrop and Monash Avenues that could be made available for the development of health related commercial facilities and services. As a destination attracting thousands of workers and visitors daily, the QEIMC needs to provide a range of support activities in addition to the primary Hospital functions in an attractive, friendly and safe environment.

Based upon a core design objective to create a new urban frontage to the QEIMC site, the Master Plan proposes two special development zones fronting Winthrop Avenue and Monash Avenues about the Hampden Road extension, that could facilitate the development of these activities and others. The zones are central to the primary vehicle and mass transit routes, car parking and the public transport hub and, as such, will be required to offer a high quality, safe and attractive environment incorporating a well detailed and activated ground level environment that might include appropriate commercial and retail opportunities. Development could include offices, research “incubators”, medical suites, retail tenancy, medi-hotel, residential apartments, and student accommodation. A separate urban development feasibility study to further the development potential of these zones is recommended.
Site Circulation - Entrances

The Master Plan recognises the scale of the development, proposing multiple dedicated entry points and clear segregated traffic circulation routes to and through the GEIMC site. The plan also responds sympathetically to pedestrian way-finding and personal security. Significant entry points, particularly Hospital and Emergency entrances, are clearly and intuitively visible from main access routes. Entrances are located to capitalise on the use of the proposed transit corridor and new bus/light rail transport hub, and have clear links from key parking locations easily accessible off Winthrop Avenue.

Key design attributes include:

- Accordance with the guiding principles embedded in the Site Access and Structure Plan
- Hospital Avenue: civic scale, but with shade, green space and a sense of openness
- Emergency entries developed along vehicle focused, long view approaches with a clear separation between public access and ambulance
- Covered vehicle set downs at the main entries, emergency and transit drop-off areas
- Covered walkway links from the two main short term visitor car parks; Service entries grouped into clear zones and separated from pedestrian and public access points
- A clear and accessible 24/7 precinct at the transport hub on Hospital Avenue linked into secure and safe access to short term visitor and overnight staff parking
- Clear separation of conflicting circulation needs, such as clinical access, public/visitors, inpatient zones and ambulatory services precincts
- Strong integration of landscape with entry points and circulation routes to and through Hospital facilities
- Canopies along Hospital Avenue combined with the wider footpaths to provide a safer more comfortable environment, with the opportunities for a street activation and vibrancy

Emphasis of special 'jewel-like' spaces in key locations, such as in the 'Great Court' and Watling Street. Sparing use of higher quality materials, colour and texture, to de-institutionalise key elements, mark particular activities and gathering points.
08 Master Plan

Site Circulation - Way-Finding and Transport

The Master Plan ‘builds on’ the guiding principles established in the QEIIMC Access and Structure Plan in respect of Site Circulation and Connection. It proposes a way-finding strategy that is intuitive, simple and direct and has a requirement for minimal signage.

Key design attributes include:

- Way-finding strategy integrated with public transport hub (train, bus, taxi) and linked into the wider precinct via primary cross site pedestrian links
- Consideration of long view/boundary entry point sightlines based on mode of access and user type - vehicle/pedestrian, staff/public, and separation of modes such as staff, emergency, deliveries, visitor access
- Clear parking provision and direction emphasising positive statements (minimise the ‘no parking’ proliferation)
- Building form, scale, materials and texture which emphasise key points of access

Safety And Access

Crime prevention through environmental design has been a key consideration during the Master Plan study; with safety for staff, particularly from parking areas (given the 24/7 operation) a major focus. The Master Plan envisages future design and development will:

- Balance security objectives with the need for a welcoming, patient-centred environment
- Maintain clear, simple and straight sightlines facilitated by core facility layout and access routes
- Ensure universal access – with all ground floor internal and external spaces designed to be fully accessible by a system of ramps and inclined walkways where necessary, and all floors accessible by lifts
- Maintain the location of entries and reception areas in close proximity to arrival locations and carparking.
Workplace

The redevelopment and expansion of the Hospitals and related healthcare facilities will be required to respond proactively to the current world-wide shortage of clinical and nursing staff as well as the particular demographic issue of Western Australia. In addition to developing facilities which are efficient in their utilisation of human resource, the NHMS and allied stakeholders must be able to recruit and retain high quality clinical personnel in a limited marketplace. To aid this objective the Master Plan proposes: Positioning and access to good transport routes and easy access from main road network Adequate on site parking Dedicated staff care facilities, catering and rest areas Retail opportunities The integration of research and education facilities into the heart of the clinical campus Office accommodation to respond to modern flexible workplace design principles Access to outdoor space Maximisation of natural daylight to staff areas, clinical, administrative and respite Secure direct routes to all facilities from main staff parking zones Routing strategy to allow for efficient circulation of staff between clinical, admin, research and education areas

Retail opportunity

Whilst QEII has a primary role in care and wellness, it must also provide a comfortable environment that can bring a level of normalcy to an often stressful time. The Master Plan aims to ensure the establishment of a mix and diversity of retail and commercial facilities at a variety of destinations to meet the everyday needs of staff, patients and visitors. In addition the potential to attract external community patronage is envisaged.

The Master Plan proposes a number of retail/commercial zone opportunities:

Hospital main entries - facilities could include pharmacy, gift shop, cafe, wellness centre, travel agent, newsagent and bank
Transport hub (Hospital Avenue) - facilities could include convenience store, gymnasium (staff and public) and office accommodation
Great Court - facilities could include public and staff cafeterias and cafe; and Hampden Road precinct. Facilities could include cafes, bookshop and office accommodation

Building Form

The redevelopment of the QEII has comprised a significant increase in both the scale and functionality of the built form. The overall form of the campus being defined by building height and the spaces between the elements, developing the integration of landscape, way-finding, canopies and architecture. The Master Plan adheres closely to the guiding principles in respect of built form established by the QEII Access and Structure Plan. Key aspects of the built form include:

Maximum height and density clustered about Block G as per the site structure plan
Sleeved commercial health related facilities to the west elevation of the multi-deck carpark structures fronting Hospital Avenue
Reconfiguration of Watling Street to a double-height space to achieve a higher level of connectivity with the BGHN ambulatory services precinct, and admit daylight to improve outlook and enhance the stature of this major movement corridor

Set back’ where possible upper level floors to reduce the scale of buildings at street level and minimise overshadowing
Optimal 30m deep floor plate to reduce scale and optimise environmental sustainability aspects
Sunshade, materials and form will be used to develop appropriate scale and opportunities to introduce diversity within a common palette, helping to de-institutionalise the facility

Building Materials

The design of the buildings that will make up the QEII campus need to both inspire and reassure. The Master Plan envisages a materials palette sensitive to the human scale and a diverse range of activities and requirements. Materials must be selected for longevity and maintainability, with consideration of vandal resistance and sustainability objectives. Areas of transparency and colour contrasted with solid and natural materials are envisaged. High quality, ‘special’ materials might be used to pick out ‘jewel-like’ areas – such as main entries, Great Court – to de-institutionalise the Hospital, assist in way-finding and promote pride and ownership of the Hospital. Painted and applied finishes must be minimised to reduce ongoing maintenance issues, emphasising natural materials such as stone, concrete, terracotta and glass.

External

Prefabricated panel for feature entry wall elements/ manufactured object may be used to pick out ‘special’ materials might be used to pick out ‘jewel-like’ areas – such as main entries, Great Court – to de-institutionalise the Hospital, assist in way-finding and promote pride and ownership of the Hospital. Painted and applied finishes must be minimised to reduce ongoing maintenance issues, emphasising natural materials such as stone, concrete, terracotta and glass.

Detailed steel for expressed structural components; columns, outriggers, connections.

Flexibility And Adaptability

The Master Plan study has considered the broad operational and redevelopment objectives for the QEII as determined in the statement of facility need and sets out a broad framework to guide the short and medium term objectives. Whilst a considerable body of work has been undertaken in forecasting future facility demand and configuration, the Master Plan proposal maintains a high level of flexibility in order to respond to short, medium and long term variables that include:

Short term:  determination of clinical and operational service planning, research facility briefing and capital works funding and programming
Medium term: emerging technologies, political and cultural change
Long term: demographic and epidemiological shift and developing treatment protocols

The Master Plan addresses these issues by proposing a number of key strategies for future needs resolution and/or change:

The minimisation of building footprints within functional and planning parameters, and the exploitation of a building’s vertical opportunity to ensure maximum clear site is retained for future medium and long term development
Permit the implementation of short-term developments within an existing and established way-finding and distribution network, minimising disruption to existing operations
Location of ‘soft space’ or expansion zones directly adjacent functions predicted to undergo considerable change or expansion

Strategies to be Developed in Future Design Stages:

A building specification that will allow for design and construction features which facilitate cost effective modification, expansion, refurbishment and re-equipping
Consideration of access and load requirements to facilitate the replacement and upgrading of major items of equipment both clinical and engineering
Further exploration of generic room principals
Landscape design principles

The quality of facilities in terms of user satisfaction, ecological sustainability and stakeholder acceptance are important considerations. The principal objective of the landscape or urban realm is to create an effective, safe, visually interesting and sustainable-based environment that can accommodate, as far as is practicable, the particular needs of the site occupiers and the local community. The Master Plan embodies the following key site planning and landscape architecture principles:

- Creation of a strong sense of place;
- Promote sustainable landscape design practices including energy and water efficiency and passive solar design;
- Create visual interest that is interactive at different levels, taking into account that some gardens will be looked at from above;
- A considered approach to the qualities of the local environment, which will reinforce the distinctive character of the area, deepening the users’ sense of place;
- The need for the provision of safe external spaces that cater for social interaction and promote a healthy environment;
- Provide a well landscaped environment that will reduce visual impact, provide shade and a variety of interest;
- Provide open space areas for conservation and protection of the environment, passive recreation, amenity and utility (such as integrated stormwater management);
- Creation of a choice and variety of setting types and spaces that can be used for a variety of purposes from civic public spaces, patient rehabilitation, staff amenity, natural habitat to active and passive recreation; and
- A considered approach to street, car park and building interfaces and the need to safely unify the physical links between the different facilities.

The Great Court

The centrepiece of the landscape proposal is the development of the Great Court. The Great Court is on the axis of the SCGH main entrance mall and fronting the WAIMR and education/conference facilities with a northern orientation. The space is envisaged as the ‘heart’ or central meeting area for the campus that will galvanise the core facilities that make up the campus redevelopment.

The east and western edges of the court are envisaged as being highly activated with cafes, cafeterias, and breakout spaces to the conference/education/training facilities. The southern edge will be addressed by significant new buildings for research and education services, allowing the development of key entry and public spaces with outstanding address and outlook. The western edge also provides significant address for the existing Lions Eye Institute and the potential to re-orientate its existing entrance to this new public space whilst maintaining existing vehicle set-down for patients and visitors.

It is envisaged as a welcoming space with clear way-finding, orientation sequences and of a human scale containing elements of civic art, sculpture and active water features.

Its character will be defined by high quality materials within an urban setting allowing visitors simple legible and easy access to the Hospitals and associated ancillary services.
QEII Medical Centre

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Streetscape Character

QEII Medical Centre (QEII MC) will be serviced by an integrated street network comprising Hospital Avenue, east-west connector supporting the proposed location of the Women’s and Newborn and Children’s Hospitals, Hampden Road extension and service streets. Pedestrian scaled service street networks with on street parking provisions, each lined with clearly defined pedestrian and cycle paths and tree planing will ensure ample shade and leafy outlook.

Streetscape elements will include street trees, on-street parking bays, appropriately scaled pedestrian and vehicular lighting, central medians with drainage capacity, footpaths and street furniture.

Three types of road treatments have been proposed, the first being Hospital Avenue, second being Banksia Street and Hampden Road extension and the third a treatment for all other streetscapes.

Hospital Avenue

Create a landscape that introduces pedestrian scale to the site.
Provide extensive shade trees to soften the impact of the deck carparking, light rail and significant building mass within and adjoining the street.
Incorporate major transport hub for light rail, buses and taxis.

Banksia Street/Hampden Road Extension

Move traffic across the site in an efficient manner incorporating light rail reserve.
Integrate with conservation remnant bushland along southern edge.
Incorporate signage and entry statements for the women’s and children’s Hospitals if relocated.
Extend Hampden Road commercial character into the QEII MC site, enhancing the setting for future education facilities and special developments.

General Streetscapes

Introduce a third scale typical streetscape with both vehicular and pedestrian traffic.
Dual use path to one verge.
Utilise verges as swales to control the storm water on both sides of the road.

All Streetscapes

Use vegetation types and encourage fauna into the corridors that are characteristic of the local environment.
Create bold planting patterns using native endemic species.
Incorporate artwork into the streetscape as both signage and sculpture to create interest and reaffirm, the theme and ideals of the development.
Provide an aesthetic and ecologically sensitive mix of native vegetation throughout the public realm which reflects seasonal variety and assists in stormwater drainage.
Engineering infrastructure strategy

Considerations
In determining a strategy for the development/redevelopment of the services infrastructure to serve a number of facilities development scenarios on the QEII Medical Centre site, the Consultant team considered the following key factors in light of the potential scope, scale and staging of the redevelopment:

- Retention of the existing ‘centralised’ engineering services philosophy including service tunnels
- A desire to remove the impact of the existing Central Energy Building (Block H) through its relocation and the creation of a new primary entry point and the approach to the new entry to SGH
- Capacity of the existing Western Power high voltage supply
- Capacity and suitability of the existing medium voltage reticulation
- Age, condition and suitability of emergency standby power generation capacity
- Capacity of existing chilled water generation plant and distribution system
- Age, condition and suitability of the existing steam generation and distribution system
- Capacity and expansion capability of the medical gas distribution system
- Age of the existing high temperature hot water generation system
- Age and suitability of the existing building management system
- Water supply, distribution, back-up and redundancy provision
- Capacity and suitability of existing communications site infrastructure

Infrastructure Philosophy
Following an options evaluation the consultant team in association with SGH Engineering Department determined that the Master Plan would embody the retention and expansion of the current “centralised” engineering services approach.

It is proposed that centralised services will be provided and distributed from the Western boundary of the site to ensure:

- A high level of flexibility and constructability for the staged redevelopment
- Improved level of redundancy provision
- Reduced impact from major catastrophe (force majeure)

A western central energy building will be established at a location central within the research/education precinct to service new and existing facilities including the Research and Education precinct. The existing service tunnel system will be expanded to link the new Western Central Energy Building.

Key benefits of the philosophy being:
- Minimal disruption and new works required to complete the Stage 1 works for the SGH Redevelopment
- Maintenance of major plant can be centralised
- Emissions and potential noisy plant are more easily dealt with when grouped
- Higher level of efficiency can be gained through the design of larger plant
- Reduced duplication of plant
- Easier to include standby plant to minimise disruption of service resulting from equipment failure, avoiding the provision of redundancy at multiple locations
- Ease of access for major maintenance, upgrading and or expansion of services
- Potential for economies of scale savings
- Reduced impact from plant noise and vibration within sensitive environments such as laboratories

Key Design Elements
Detailed strategies have been prepared by the Master Plan consultant team for core mechanical, electrical, hydraulics and communications infrastructure (refer separate reports). The key elements embedded in the Master Plan concept are:

Communications
- Progressive upgrading of the site to VOIP (voice over internet protocol), hence all voice services are included within the data network.
- Demolition of existing communications building (Block V) at completion of the upgrade.

Mechanical
- Eastern Central Energy Building:
  - Decommission and removal of all redundant plant and equipment
  - Western Central Energy Building:
    - Chilled water generating plant
    - Hot water heating plant (heating hot water and domestic hot water)
- Medical air compressors
- Medical gas supply (oxygen, nitrous oxide)

Electrical
- Establish a new Western Power district substation on the QEII Medical Centre site, designed to operate at 11,000V (current supply is 6,150V). The site will operate from both the new and existing substations for a period of two years to allow orderly transfer of load from existing and remaining buildings to the new substation.
- Replacement of most of the site distribution cabling to overcome inherent installation limitations in the current system and to establish a new feeder network.
- Provision of a new emergency standby plant, doubling the current capacity to meet demand from future development and restore reliability. (Timing to coincide with commissioning of the new substation).

Hydraulics
- New buildings will be connected via separate sewer drainage lines (fixed within existing and proposed new service tunnels) to existing Water Corporation sewer in Hospital Avenue.
- Proposed new buildings and carparks will be connected to existing onsite stormwater drainage system to prevent additional load on the existing compensating basin.

Central Energy Building
- New mains water supply from existing upgraded boundary connections. Mains to be installed within new and existing service tunnels.
- New buildings to have water supply back up and redundancy provisions complying with Department of Health of Health Engineering Guidelines.
The first stage building program is scheduled for completion by 2015, the development of a new Children's hospital and associated research facilities, treatment facilities, a new mental health unit, a comprehensive Cancer Centre, pathology, support facilities and infrastructure upgrading, and expanded research facilities. A new central plant facility will be established towards the western portion of the site and the adjacent Western Power sub station upgraded.

Stage 1 will also involve significantly expanded parking facilities that will be developed in an integrated way with the recently launched Travel Plan and Public Transport Master Plan. Both Plans encourage greater use of public transport, cycling and walking – particularly for “nine-to-five” employees at the site.

<table>
<thead>
<tr>
<th>QEII Medical Centre</th>
<th>Commencement on site</th>
<th>Completion</th>
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09 Master Plan Diagrams

Diagram 1: Ultimate Development Diagram

Diagram 2: Stage One Development Diagram

Diagram 3: Stage Two Development Diagram
QEI Medical Centre

09 Master Plan Diagrams

QEII Medical Centre

Master Plan Diagrams

* SUBJECT TO THE RELOCATION OF CRAWFORD LODGE