part
three

building and services brief

3.1 building design brief

3.1.1 Regulatory Compliance

Compliance with Codes and Standards

The building/s design must comply with the Building Code of Australia (BCA) and all relevant codes and standards.

Where any discrepancy exists between this Brief and the BCA, Australian Standards or other relevant standards, the BCA or relevant Australian Standard shall prevail.

Building Code of Australia

The Design Architect will be responsible for determining the building classification and construction type in accordance with the current version of the Building Code of Australia and for ensuring that all aspects of the design comply with this regulation.

Australian Standards and Codes

All Australian Standards and Codes of Practice as published, which have a direct application and relevance to the project will apply to the design.

The Standards and/or Codes applicable to the project shall be the edition last published one month prior to the date of commencement of the design and documentation.

Accessibility

The design team must ensure that all areas of the Centre are safe and accessible to all potential users, regardless of any physical or sensory disability. This is a requirement which will influence the design of every part of the complex, from the provision of convenient parking spaces for people with disabilities, level access to the entrance, right down to the appropriate height and stability of furniture and equipment.

The entry to all parts of the Centre should be accessible with a barrier free circulation path to and around the facilities. It should be designed in accordance with building codes and standards for ramps, door widths, passageway widths that enable wheelchair access and turning, lifts, accessible toilets, luminance contrast to assist people who are vision-impaired etc. Hearing loop functionality needs to be planned for.

Public toilets are to have a maze style entrance in preference to a double door air lock.

Some of the issues involved are:

• Floor coverings should be non-slip (Building Code of Australia and Australian Standards AS/NZS 4586 and 4663) and be tested using a range of methods including ramp and pendulum testing.

• Care should be taken to ensure that any in-floor or floor-mounted features do not present mobility problems.

• The needs of staff and volunteers with disabilities are also to be taken into account in the design process.

• The needs of staff and all community volunteers with disabilities are taken into account in the design process

Attention is drawn to the Australian Standard AS 1428, Design for access and mobility, to the Building Code of Australia and to Section 23 of the Disability Discrimination Act. Advisory notes on access to premises have also been issued by the Human Rights and Equal Opportunity Commission.

Work Health & Safety (WHS) Requirements

Current WHS legislative requirements are contained in the:

• Work Health and Safety Act 2011

• Work Health and Safety Regulations 2011

Environmental Sustainability

The Local Government Act 1993, Section 7, requires council, councillors and council employees to have regard to the principles of ecologically sustainable development (ESD) in carrying out their responsibilities. ESD is a pattern of development which improves the quality of life, both now and in the future, by maintaining the ecological processes upon which life depends.

Libraries are at the forefront of educating their communities on ESD as they offer:

• A broad reaching opportunity to experience and promote ESD

• The public an opportunity to experience and promote ESD

• A catalyst for environmentally sustainable neighbourhoods

Refer to Section 1.6 for detailed consideration of environmental sustainable design.

3.1.2 Building Design Requirements
Finishes

Colour schemes are to be prepared for Council approval. Colours are to be selected having regard to the psychology of colour and its influence on user behavior.

Durable, high quality and low maintenance finishes are required throughout the facility. The finishes selected should, where appropriate, be of colour and a texture to discourage graffiti.

Preferred floor coverings for specific areas will be spelt out in the Room Data Sheets. Where carpet is used, it will consist of carpet tiles and will be subjected to very hard wear at entrances, around counters and in most staff areas. As food and drink can be consumed within the library carpet surfaces must be able to be readily cleaned should a spillage occur. The carpet will require a low pile, to facilitate trolley movement. Selection of the colour of the carpet and its pattern, if any, will require close consultation with Council staff. Alternatively high quality carpet tiles ("modular carpet") may be considered. When laid on concrete, carpet tiles will require an underlay.

A quantity of spare carpet (minimum of 1%) from the same batch of carpet used for the fitout is to be handed over for placement in Council's store at the conclusion of the fitout of the premises.

At specific service points, such as service points in the Library, anti-fatigue matting may be required if the general carpet and underlay used is insufficiently soft underfoot.

Floor finishes to amenities, kitchenettes and catering kitchen are to be covered with impervious finishes which will require appropriate slip resistance to meet Australian Standards.

Floor loading

The floor loading are required to be designed to allow for the installation of book shelving (including compact shelving in staff Work Room and Stores), with loadings in accordance with AS/NZS 1170.1:2002.

Walls

Walls to activity rooms require a high level of impact resistance and are required to be impact resistant plaster board where constructed in light weight partitions.

Windows

It is highly desirable for public and staff areas to have access to some natural light. Direct sunlight should not fall on collections or reader places. The client would prefer not to rely on manually-adjusted blinds to screen out unwanted sunlight. As noted under 'Walls', there may be some internal walls of 'smart glass' to prevent nuisance glare or rogue reflections.

Users and staff in the main areas of the centre should be able to maintain full visual contact with the outside. Similarly, from the outside, where appropriate, the centre needs to provide transparency to see into public areas.

When using natural lighting the following must be considered:

- Solar heat gain: especially as a result of large expanses of unshaded glass on north, east and west facades, which will cause a rise in air conditioning energy costs and discomfort for occupants
- Appropriately designed fixed sun shading should be provided in these locations
- Glare: will cause discomfort to users. Even within newly constructed libraries, which embrace ESD, there have been issues of glare which have involved the retrofitting of blinds and shades.

Where windows are provided to achieve natural ventilation, these should be connected to automated controls, managed by used by push button and through the building management system.

Ceiling

As a public building acoustic ceiling tiles are not the preferred ceiling materials, and should only be used in limited areas if specific access is required above ceilings.

Generous ceiling height is desirable in the library, where ceilings are to be no less than 3300 mm above finished floor level. The ceiling height of the library area directly behind the foyer should be noticeably higher to create a sense of space.

Allowance must be given for the impact of ducted air-conditioning on ceiling heights.

Acoustics

Libraries and Community Centres are vibrant active spaces with an expanding range of simultaneous uses that may require both concentration and focussed thinking in tandem with large group events that are highly participatory. Design for acoustic quality needs to set the appropriate balance of activities and building zones that are visually connected but acoustically separated.

In addition to being a vibrant and engaged community space the library also needs to provide areas of quiet and solitude.

Design needs to consider sound isolation/sound containment, noise management and interior acoustic quality.

Design must include input from an acoustic engineer.

Acoustic rated walls and doors are required between specific spaces as follows:

- To bounding walls to Activity and Meeting Rooms: Rw50
- Operate walls between Activity and Meeting Rooms: Rw49
- Quiet study rooms: Rw33
- Group study room: Rw38
- Between library and library offices: Rw43

Sections of perforated/plasterboard ceilings with acoustic insulation over will be required to library and Activity rooms to sound management to these spaces.

Design needs to incorporate Building Code of Australia and Australian Standards 2017: Design Sound Levels and Reverberation Times for building Interiors and Australian Standards 2017: Design Sound Levels for Building Interiors.

Flexibility and adaptability

The interior of the Library must be able to adapt to easily suit future changes in service provision. Permanent partitions should be minimised. Lighting, power and air conditioning should be able to cope with changes in layout without major service reconfiguration. The column module must be regular and generous, and must be sub divisible between column faces by 900mm, the nominal standard shelf width. Inflexible elements, such as lift cores, stairs, services ducts and toilet blocks must not be located where they will have a major impact on future adaptability or flexibility of layouts.

Design must also allow for effective acoustic management both for the initial arrangement and future adaptions.

The large meeting room with external access will feature a moveable partition wall, which will enable conversion of the two rooms into one.

The design of the new facilties must take into account possible future changes in floor area requirements, allowing for expansion or contraction of Library space as needs, resources and technologies change during the life of the building.

Public art

As part of the key strategic directions from the Community Strategic Plan: 2030 Council identifies that it should "Investigate opportunities for showcasing the visual arts". Any public art projects associated with the library should be informed by Council's Public Art Policy.

Safety and security

An appropriate level of security is now required in all public buildings to ensure the safety of staff, users, the building and the Library collection. The entire facility must be designed to be safe and secure, in such a way to deter vandalism and inappropriate behavior and to minimise security problems.

Electronic surveillance, both internally and externally, will be included in the building design. It must be done to be effective but not overly obstructive. It will act as a further deterrent and is particularly effective where cameras are visible, for broader surveillance where natural surveillance cannot be achieved, as well as an evidence tool used by police. It also needs to be robust in design and appropriately located to reduce the risk of vandalism.

To counter the possibility of vandalism:

- There are to be no concealed corners with windows (particularly louvres or sliding windows) which can be broken or forced)
- Night security lighting
- Relevant doors and windows that could be forced fitted with an appropriate alarm system
- Maximise passive surveillance from adjoining land uses (e.g. Residents, business owners) and passing pedestrian and vehicular traffic
- Reduce the amount of black walls which are attractive for graffiti and/or use building materials which are difficult to graffiti
- Building materials should be easily cleaned, repainted or replace

Exits from the library must be limited and controlled to avoid illegal removal of library materials. Any necessary fire exits must be designed so that they cannot be used other than for the designated purpose. The exterior of the building should be designed with clear lines of sight around the building, appropriate light levels and designed to avoid blind spots. Public areas need to be overviewed by others with clear sight lines from private to public areas, effective lighting of public places and landscaping which does not provide areas for people to

hide or entrap victims. Private areas need to have well-defined, well-lit entries with safety provisions incorporated into windows/courtyards fronting public areas.

All designs should be informed by Council guidelines and input from NSW Police as required.

An alarm panel for Library areas will be required at the main Service Desk. A silent duress alarm button will be required at all service desks. Alarms will be linked to Council's Security Contractor, and will also indicate alarm status at the interface between staff work areas and public areas.

Door locks

Council utilises automated locking to the main doors of their buildings and to specific functions, which are connected to their building management and security systems.

Doors required to include automated controls include:
- Main building entrance
- All external doors
- Entry point to library
- Entry point to visitor information centre
- All activity rooms
- All community centre storage rooms, kitchenette and catering kitchen
- To library back of house
- To offices and common rooms

Each door will include electric striker or magno lock (double doors) which will be controlled via a proximity card. Manual mortise locks must also be included to all circulation type doors.

Shelving

In general there are four categories of shelving to be considered in fitting out this library:

- 'Standard library shelving': this refers to cantilever-type shelving. This shelving is appropriate for all public areas and in staff offices where there are considerable amounts of shelving. Standard shelving needs to exceed the minimum requirements of Australian Standard 2273-1973, where possible.

- 'Office shelving': various lengths of shelving will be required to match the office furnishings.

- 'Compact shelving': this refers to rolling shelving on tracks, which may be surface-mounted or flush with the floor, with one or more access aisles per unit of compact shelving, permitting greater use of floor space for low-use materials. Mobile units need to be

easily moved with minimum effort and will require mechanical or electromechanical assistance.

- 'Special shelving': this is required for items such as DVDs, CDs and picture books and will include displays similar to those used by retailers. These elements will be bespoke joinery.

- Some units of low shelving, for example in children's areas, may be on lockable castors to facilitate flexible use of space.

A number of spare new shelves, brackets and easily-installed and adjusted bookends are to be supplied as part of the fit out contract. The quantity required is to be discussed with Council officers.

Furniture and fittings

Furniture selection and design needs take account of the wide range of users, including people with physical disabilities. Care needs to be taken to ensure that designs are safe and ergonomically sound. Furniture needs to be robust, yet attractive and easy to maintain. Fabrics used need to be readily cleaned. Wherever possible furniture should be modular so as to facilitate reconfiguration as use and demand change. Readily available standard items of furniture are generally preferred to custom-built items, because of lower initial and replacement costs. Furniture which will accommodate personal computers and associated equipment needs to incorporate suitable wire management facilities, and address work health and safety issues: for example rounded corners of desks and tables are preferred to sharp edges.

3.2 building services brief

3.2.1 Electrical Services

Generally

A modular ducting system, incorporated in a floor or ceiling grid and around the perimeter of areas, will enable relocation of furniture and equipment. This flexibility of design is essential in the contemporary library where space needs to change and evolve to meet community needs and technological developments. Such ducting, conduits, ducts and cable trays, must allow for considerable expansion during the life of this facility. A minimum of 50% spare capacity is to be allowed at the distribution boards and in conduits and cable trays for future use.

Electrically "noisy" equipment should not be on the same circuits as computer equipment. Switchboards should be located so that electromagnetic interference does not affect sensitive equipment or raise occupational health and safety concerns.

Surge protection will be required on the main switchboard.

Centralisation of power switching is required, so that it will not be necessary to turn off all individual switches, for example for public access computers, when the facility is closing. Main switches should be located at the staff entrance and must be secure.

Uninterruptible power supplies are required for all servers and critical electronic equipment.

Data and Communications Reticulation

A multi-technology backbone system is required capable of reticulating communications signals from latest technologies to all areas of the building. Adequate space must be allowed for secure housing of patch panels, switches and cable risers. Close coordination with information technology personnel of Council and of the Library is required when designing communications and data cabling provision. The design which emerges must allow for a high initial capacity and for considerable future expansion. Great flexibility is also required, through the use of perimeter ducting, columns and an appropriate grid system in the floor. Power and data may be required virtually anywhere during the life of the building. The reticulation systems used must also be easy to locate, install and maintain.

The Library requires a flexible telephone system, whilst remaining accessible to and from Council's network.

Phones are required at all service desks. Main line mobile handset will need Wi-Fi access from any location within the building.

Building design must also allow for general Wi-Fi access in all staff and pubic areas (including foyer and meeting rooms).

Fire services

Fire extinguishers and hose reels will be installed as required by relevant legislation and good practice will dictate the extent and type of fire detection systems installed. Any systems of thermal and/or smoke detectors will be linked to Council security. There is no objection to the use of sprinklers in the Library if these are required.

Lighting

Lighting within libraries should firstly offer a range of spaces and settings for different activities and secondly can empower the visitor with a limited degree of personal control where the lighting conditions may be modified by the individual. The aim is to create a degree of control and flexibility between daylight and artificial lighting. The general rule of thumb for library lighting is to provide light of even intensity and distribution for lighting shelves and task surfaces. Flooding all interiors with light can result in a clinical and unfriendly environment. The aim should be to create comfortable and welcoming spaces. The following needs to be considered:

- Ceiling and wall surfaces to be light reflective
- Localised lighting for tasks and areas such as study desks
- Lighting control systems
- Flexible ceiling grids to offer greater options for cabling and lighting

Wherever possible natural lighting should be used in preference to artificial lighting.

Recommended lighting standards for the Library are:

- 100 Lux: for closed areas such as stacks. Illuminance should be measured at floor level
- 300 Lux: for workrooms, foyers, staff rooms, washrooms, lounges, offices. To be measured at desk height, and
- 400 Lux: for all other areas, such as public lending areas, reference sections, counters, reader advisory desks. To be measured at desk height.

A lighting engineer should be consulted in the planning stages.

Elsewhere lighting should comply with the Building Code of Australia and Australian Standard 1680: Interior lighting.

Refer to AS1158 series for public and pedestrian areas and street lighting design.

Lighting should display the building during the hours of darkness in a flattering way and to accentuate the architecture throughout the hours of darkness. A public library is used when its readers find it convenient, which in many instances means evening and after dark. The lighting around the library should create an inviting atmosphere where people feel safe, including close proximity to the building for people to access the Wi-Fi.

Lighting design should assist in avoiding/mitigating unsafe areas which may lead to entrapment or property damage.

After hours security lighting of the premises is to be provided. External lighting should use long-life components and be vandal-resistant.

CCTV

The building shall incorporate CCTV surveillance, utilising digital IP cameras connected to the structured communications cabling system.

External cameras shall be connected in fibre optic cables to limit the damage from lighting strikes.

30 days of data storage of the CCTV images shall be provided.

The system shall interface with the ACID system and shall incorporate image buffering technology.

- Camera housings and mounting brackets
- Cameras
- Monitors
- Lenses
- Power supplies and cabinets
- Switches and image storage

CCTV coverage shall be provided to the following areas:

- All doors with access control
- Public spaces
- Public meeting rooms
- External plaza area
- Lifts
- Carpark

Data from the cameras shall be stored on a hard drive located within the Main Communications Room, in a uniquely locked rack.

Audio visual

The building shall incorporate the following Audio Visual services:

- A multi zoned paging system
- Projectors, projection screens, speakers, amplifiers, DVD players, computer facilties and associated cabling to meeting rooms
- All cabling and connectors
- Hearing augmentation
- Feedback suppression

The installation of cables shall be carried out in such a manner that the performance of any Audio Visual Systems equipment shall not be impaired by noise induced by cabling or by earth loops.

3.2.2 Vertical Transportation
Lifts

Should a lift be required it must comply with AS1735: Lifts and escalators. Dependent on final design a lift may be required for both public access and for workroom activities and deliveries. Lifts must be large enough to handle movement of furniture, deliveries and be able to accommodate an ambulance stretcher.

3.2.3 Hydraulic Services
Generally

Domestic water supply is to ensure that potable water is available from all taps. All fixtures and fittings used are to have the highest possible energy efficiency rating and controls to minimise water use. Use of water efficiency technology must be fit for purpose.

All plumbing should employ water-saving technology, but it must be fit for purpose and not impact on the main functionality of the equipment in question.

Plumbing will be required for the staff room, public toilets, the sinks in the meeting room, the user kitchenette, catering kitchen and for drinking fountain in the foyer.

Public toilets to have a maze style entrance in preference to a double air lock.

External access to plumbing will be required for activities such as watering the gardens.

3.2.3 Mechanical Services
Temperature and humidity control

Council's aims and objectives for ecologically sustainable development are set out in its general documentation for the project, and should be applied to temperature and humidity control. It should be noted that library materials are prone to mould when subjected to high levels of relative humidity (RH). Although there is no universal standard for RH, it is generally accepted that a reasonable range for storage of paper-based materials is 40-60% RH.

The facilities will be an important haven for general public during extreme weather events and needs to be designed to provide comfort in days of extreme heat. The air conditioning design must cater for such temperature extremes.

The design should include provision for replacement air so that the air does not become stale.

To reduce energy usage the air conditioning system is to be designed with individually controlled zones to each functional component.

The following controlled zones will be required:

- Library public spaces
- Library back oh house
- Each activity room needs to be separate system
- Each meeting room needs to be a separate system
- Visitor information centre
- Foyer

Consideration should be given to energy efficient air conditioning systems such as:

- VAV (Variable Air Volume) systems, displacement (offering cool air only when needed), passive and active chilled beams (passing chilled fluid through ceiling units), occupant sensing for Carbon Dioxide levels (monitoring provision of fresh air)
- Tempering the air through thermal mass, such as thermal labyrinths where the air passes through cool, usually underground space, reducing its temperature before being conditioned
- Water-efficient air conditioning

The design should aim to minimise the use of energy from non-renewable resources. Wherever possible it should consider local sources of renewable energy such as solar, geothermal and wind.

If ducted air conditioning is used it should be quiet, unobtrusive, sympathetic to the building design and take into consideration ceiling heights.

Provision will be made for centralised control of air conditioning to the after hours meeting facility.

Appropriate and stable conditions will be required for the Library's IT equipment room.

Exhaust

All amenities are to be provided with exhaust systems to code compliance.

The catering kitchen is to include a localised exhaust hood over the cooktop.