Carisbrook Stadium

General Brief Requirements

Section A – General Requirements Contents

0.0 REVISIONS

Revision	Date	Desciption
Draft	8.12.06	Draft Part A Issued for review
01	12.02.07	Issued as a draft as part of the Master plan Document

Section A: General Requirements

1.0 PROJECT DESCRIPTION

The Facility Brief is based on information from the first Workshop set on 27th and 28th of November 2006 and subsequent information issued by Arrow International. Further workshops are required to develop and define the brief, design, functional layout, budget and value engineering,

Throughout Part A, the term "VIP" has been used to collectively identify the suite holders, corporate box holders, and patrons who will be accessing the function rooms.

1.1 Project Goals – Governmental Objectives

The stated objectives and goals of the Carisbrook Stadium Trust are:

1. To create an international standard dedicated rectangular pitched stadium which should be designed to achieve optimum value for money.
2. To develop a stadium with 25,000 – 30,000 seats for a range of uses including, but not limited to: rugby union and entertainment events.
3. The ORFU and Highlanders will be the primary tenants.
4. To provide a facility that is functional and identifiable as the "House of Pain".
5. To provide a highly cost effective low maintenance facility.
6. To complement a sports and entertainment precinct that can be used seven days a week by ensuring the stadium integrates with, and makes use of, adjacent civic spaces and commercial and community facilities.
7. To complement and integrate with the Otago University.
8. To utilize existing transport services to adequately and efficiently service the stadium during peak times.
9. To act as a catalyst for complementary development in the surrounding area.
10. To provide a facility that will achieve a 50 year life.
11. To provide a facility that can be utilized all year for a number of events, in order to maximize opportunity for revenue generation and sustainability.
12. To provide an "inspirational" stadium that reflects the growth of heritage of the Carisbrook tradition and is a showcase for sport, the university, the city and the region.

1.2 Project Goals – Stadium Consultants' Objectives

In addition to the stated Carisbrook Stadium Trust Objectives it is the design team's objective to establish the following goals:

1. To create a 25,000 – 30,000 seat stadium that maximizes atmosphere and intimacy and enhances the event experience for spectators.
2. To create a stadium that is uncomplicated to construct and easy to maintain and operate.
3. To develop a proposal that can be constructed within an established construction budget.
4. The field shall be orientated East-West, with premium facilities located on the South side.
5. To provide an optimum seating bowl to create a European soccer style environment and atmosphere
6. Sufficient entry plaza area to allow for safe entry and egress for the stadium in the event of an emergency.
7. Sufficient infrastructure to allow for safe entry and egress for the site.

8. To develop a sustainable proposal which allows for the most recent environmental requirements

1.3 Event Schedule

Event	No. of event days	Forecast Attendance
ORFU		25,000 – 30,000
Highlanders	6 super 14 games	25,000 – 30,000

** Capacities and events shown are sourced from the relevant sporting code's official websites (fixtures for the domestic season unavailable at time of writing), and as advised at the first workshop on the 27th and 28th November 2006.*

1.4 Existing Conditions

TBC.

1.5 Seating Capacity Objectives and Expansion Provisions

The approximate net seating distributions, including Enhanced Amenity Seats (EAS) and wheelchair positions as currently planned are listed in the table below. Levels of season ticket and associated amenity packages are to be advised:

	Capacity	**Comment**
GA seating	24, 544	
Premium Members	5,000	Indicative figure to be confirmed by stakeholders
Wheelchair (0.5%) + companion seating (0.5%)	150	Included in overall capacities
Ambulant disabled (0.5%)	75	Included in overall capacities
Function Room Seating	1,000	
Corporate Box Seating	288	Excludes Hirer's box suite and Founders Club
Suite Seating 18 no. (16 persons)	18 suites	
Hirer's suite	48	
Founders Club	120	
TOTAL	30,000	including temporary provision

The base stadium is recommended to have seating for 30,641.

1.6 Recommendations

The functional requirements are summarized here (*see Part B for details*):

- A variety of seating types will be configured around a rectangular pitch, consisting of a combination of general admission seating, season ticket , corporate seating including private boxes and suites, and press seating. Numbers to be confirmed.
- Seating for People with Disabilities (PWD's) will be distributed at various locations within the seating bowl. The criteria to be allowed for is:
  Wheelchair and helper: 1% of capacity, which is made up of 0.5% for wheelchair and 0.5% for helper.
  Ambulant disabled: 0.5% of capacity.
- Public toilet facilities will be provided in accordance with the guidelines in the Football Stadia Development Committee (FSADC).
- Restroom provisions for Members / Corporate Facilities:
  Minimum recommendations for new stadia is as per recommendations of the FSADC. Recommendations are based on a 50:60 ratio of women to men.
- Restroom provisions for Public:
  Minimum recommendations for new stadia is as per recommendations of the FSADC. Recommendations are based on a 40:70 ratio of women to men.
  - Number and locations of disabled wcs to follow FSADC recommendations.
  - *Toilet provisions for spectators are based on the 30,650 capacity.*
- Kitchen, commissary, and pantry facilities will be provided to service the food and beverage and bar outlets, lounges, function rooms, corporate boxes, and suites. The main kitchen and commissary will be located on the ground floor with access to the service road, loading area, and goods lift.
- Separate general admission, VIP, media, team and staff entrances will be provided.
- The public concourse to be continuous on all sides of the stadium. Guest services, such as First Aid and customer service booths, to be distributed around the public concourse.
- A service access route is to be included to accommodate coach, ambulance, garbage truck, forklift/pallet mover, and automobile circulation.
- Clearance height around the service road and height access into the arena should be 4.0m.
- Event and operational facilities will be provided for teams, administration and ticketing, media, event support, and operation/maintenance.
- Egress gates from the stadium shall be designed to comply with the 'Green Guide' in terms of a timed exit analysis required width.
- Concourse shall be provided for General Admission and Members levels and shall provide direct access to amenities and seating. Concourse shall be designed in accordance with the Green Guide.
  Area Allowance = 0.25 sq/person
  Maximum distance from seating aisle entry to concession / toilets = 40m
- Space for temporary retail and/or food and beverage components to be provided.
- Designed in Accordance with the Guide to Safety at Sports Grounds (The Green Guide)
- Safety zones around stadium.
- Entry plaza's designed to accommodate magnetometers and bag search as required.
- CCTV coverage
- CPTED Design Principles
- Security of match officials, code requirements.
- Police / Event Day Control Room

- Car Park and vehicle access control
- Vertical separation between front of house and service levels of the stadium.
- Vehicle access control into and around the stadium.
- Ability to control car parking.
- Vehicle barriers to plaza areas and stadium entries
- Lighting to be determined by a specialist lighting consultants for each of the sports codes.
- To provide a seamless synergy with the Otago University facilities and plaza.
- To provide accommodation for ORFU administration. Area and type tbc.
- To provide flexibility within the seating bowl for capacity, using relocatable seating.
- To provide flexibility for areas within stadium for use by University, Sport and commercial ventures.

1.7 Artworks

Allowances will be made within the project design to incorporate works of art, either as built in features/fixtures or freestanding components. Placement and locations of such artwork are to be determined.

1.8 Waste Management

A recycled waste management strategy in coordination with the operator requirements is to be implemented.

1.10 Asset Register

An Asset Register system to be implemented as part of this project.

2.0 DESIGN ISSUES

2.1 Architectural Design

As agreed at the first workshop on the 27th and 28th November 2006

- The stadium design includes a roof that extends around the entire perimeter of the stadium which will intensify the atmosphere inside the stadium and increase the intimacy between the spectator and the action. The stadium to be designed to take advantage of the Dunedin climate and the roof structure and form is to allow a strong identity and sense of space to be developed.
- The seating bowl is to achieve the closest seating configuration, optimum sightlines for viewing events, as well the maximum coliseum effect.
- The roof structure to provide the external walling enclosure to all sides of the stadium to create a secure perimeter enclosure.
- Roof coverage to be 80%-100% of seats, although It has been requested that a number of roof types are investigated by the design team including open, retractable and fixed closed. The roof type should not be detrimental to the playing surface and should enhance the atmosphere and general enjoyment of the event for the spectators.
- A service access route is to be provided and separated from main public thoroughfares.
- Function rooms and a shared pre-function space to be provided. It is intended that events will be held in these functions spaces all year.
- Corporate suites are to be provided with viewing seating in front of the glass line, with standing room provided behind the glass line.

- Function rooms and corporate suites are to have a view of the pitch.
- The stadium and building services to be designed and constructed in accordance with the relevant New Zealand Standards and codes of practice where appropriate.
- The stadium will accommodate provisions for emergency services.
- Viewing standards will be to recognised world standards for rectangular pitch sports. A minimum C60 sightline value shall be adopted to a focal point at pitch level to the side line for the largest rectangular field of play.
- Corporate suit and lounge viewing to achieve minimum C90 sightline value.
- Viewing from behind the try line to achieve a minimum of C60 sightline value to a focal point 5m back from the try line or to the deadball line, whichever is closer.
- Sightline to be unobstructed to 18m vertically at the centre line and 12m vertically at the posts.
- A standing terrace to be included.
- Shortest distance from viewing seats to video board should be achieved.
- Dedicated entry and circulation for players / athletes shall be provided under the main stand.
- Dedicated secure team Bus Drop Off for home and away teams.
- Home and Away Players Access Tunnel to Field
- Separate Referee / officials Tunnel
- Medi-cart access from field to Players Changing area / medical facilities
- Dedicated and secure access route for ambulance
- Home and Away changing rooms
- Two further ancillary changing rooms
- Umpire/referee changing area with room for trainers and medical/physios.
- Band / entertainers / cheerleaders change and practice areas
- Star dressing room
- Junior rugby (M/F changing facilities & holding room)
- Staff briefing area
- Medical centre for teams in each changing area, with up to 6 beds in each.
- Blood testing and doping areas to be included.
- Medical centre for public on concourse with up to 6 beds.
- Secure officials route required from referee/umpire positions to pitch side
- Interchange benches to should not obstruct viewing from adjacent public seating.
- Minimise height of the roof to the north end to allow for light ingress to the playing surface.
- Roof over stands and field of play (tbc)
- Roof to allow maximum light ingress to the playing surface
- Electronic turnstile to be provided under cover based on the following arrival rates:
- General Admission 1 turnstile per 1000 patrons per hour.
- Corporate / members : 1 turnstile per 600 patrons per hour.

2.2 Site Design

A Master Plan strategy is being developed through consultations and workshops with the stakeholders and consultants and through discussions held with local councils regarding the developmen. A few general observations are relevant here:

- The playing field is to be oriented within the optimum parameters for field orientation. Orientation should also maximize external circulation / evacuation space.
- On site parking to be provided for non-event day. This parking will serve as an enhancement to the surrounding developments. On event day, use of these carparks will be restricted. The public plaza of the stadium should create an area for pedestrian circulation and other activities. Any adjacent carparks and kerbing to be designed to accommodate pedestrian flow and the finishes of the carpark will be integral with the plaza so it appears as one space, but should align with local

road policy. In addition, dedicated stadium parking will be provided for administration, operations, media, team, and possibly VIP parking.

- Further car parking for the stadium will be required but should be in line with local council traffic policy.
- Event day vehicular access to the site need to be accommodated within the design as it will be required primarily for media, services and operational teams, VIPs and emergency vehicles.
- The site should be located within walking distance from local rail and bus networks, as it is anticipated the public transport will eventually provide the primary mode of transport for spectators.
- It is envisioned that, on event days, all or part of adjacent roads will be closed temporarily, allowing for a wide and safe pedestrian route that can also enhance the surrounding developments.
- The plaza is to be designed as an open space to allow for maximised and safe pedestrian circulation during events. Some hard landscaping components, such as benches, may be integrated in strategic locations to enhance the plaza and break down the scale of the open space.
- Power outlets for plaza use to be incorporate in the metal mesh fence enclosure of the stadium exterior.
- The main public entries to be located to respond to the largest influx of spectators – such as from rail stations, coach, bus, and taxi drop offs.
- Provisions for local weather and topographical conditions based on the consultant's recommendations and as reviewed with the local council.
- Environmentally sustainable design: Provisions for storm water retention to be included.
- Storage tanks to be included for fire protection, capacity to be confirmed.

Car parking numbers are to be inclusive of disabled spaces, which will be provided to meet New Zealand Standards.

2.3 Heritage

Heritage sites on or adjacent to the stadium site to be assessed where required by the local council.

2.4 Transportation

- A strategy to address pedestrian and public transport routes will be developed in consultation with the traffic consultant and the stakeholders, including but not limited to Dunedin Transport, Otago Department of Main Roads and Rail. The preliminary external transportation principles are set out below, but not limited to:
- Integrated Public Transport
- Targeting between 50-75% PT utilization.
- Car Parking restrictions around stadium.
- Potential dedicated shuttle bus to serve stadium and promote public transport.
- Upgrades to rail stations to provide safe access, egress, queuing to platforms.
- Limited on-site car parking.
- Coach Parking near stadium.
- Pedestrian Infrastructure upgrades
- Separation of pedestrians from vehicle movements.
- Entry Plaza's to be designed at 0.35sqm per person in front of entry gates.

2.6 Advertising

Accommodation will be made for several varieties and locations of advertising:

- Space for pitch board advertising will be provided to maximize exposure as well as to suit TV camera positions.
- A "clean" stadium is required for hosting Rugby World Cup and other major international events, meaning that all existing advertising placements must be voided to provide full advertising opportunities for these events.

2.7 Provisions for People with Disabilities

The Carisbrook Stadium will be designed and constructed to comply with the relevant requirements of New Zealand Standard NZBC.

2.8 Catering

- An efficient and effective system for serving food and beverages to spectators, participants and corporate/VIP users should be provided.
- Counter space for food and beverage and bar outlets will be based on 30,000 capacity.
- 5 lineal metres of food and beverage counter space should be provided for each 1,000 patrons. 4 lineal metres should be provided for bar counter space for each 1,000 patrons.
- Major fast food concessions should be no less than 6m deep, whereas minor food concessions selling only reheated product, could be 4.5m deep.
- Bars should be a minimum depth of 3m.
- All goods should be delivered to the loading dock for unloading and transportation to the Bulk Stores.
- Any goods not requiring preparation should be issued, as required, to all concessions and other catering outlets. All goods requiring processing should be issued to the commissary kitchen. From there, they should then be distributed to the satellite kitchen and concessions via motorised vehicles.
- The commissary kitchen should be both a preparation and pre-cooking kitchen for all of the satellite kitchens. It should also prepare some menu items such as sandwiches, for the concessions, and meals for the Corporate Suites and VIP Lounges.
- Adequate storage for food and beverages, including refrigerated storage, should be provided with good access for deliveries to the bulk stores and from these stores to distribution points.
- Additionally, storage for food and beverages (cold, frozen and dry) should be within the concessions.
- Vertical access to each floor should be via ramps and/or service lifts.
- These lifts should be able to restock concessions and serveries during events.
- Horizontal access should be mainly via motorised vehicles.
- Centrally located beverage cellars should be provided throughout the Stadium and as a general rule, beer line and post mix runs should not exceed 50m from cellar to tap. Where centralised reticulation is not practical, local facilities should be provided. A centralised food gas system should be investigated on a life-cycle costing basis.
- Suitable accommodation and facilities should be provided in convenient locations for catering administration and staff needs.
- Travel distance to concessions should be no greater than 40-60 metres from vomitories.

3.0 DESIGN AND CONSTRUCTION STANDARDS

3.1 Standard References

This Facility Brief has been developed through a process of consultation with the various stakeholders and recommendations based upon HOK Sport's experience with the design and development of stadia around the world and within New Zealand. Reference has also been made to the following documents and publications:

"Guide to Safety at Sports Grounds (the Green Guide)". Fourth edition – 1997.
New Zealand Building Codes and NZ4121
"Toilet Facilities at Stadia – Planning, design and types of Installations" published by the Football Stadia Development Committee (FSADC) – 1993.
Guide to Health, Safety and Welfare at Pop Concerts and Similar Events, 2nd Edition, 1997

4.0 ENVIRONMENTAL SUSTAINABLE DESIGN

The design and construction of the Stadium will incorporate principles of Ecologically Sustainable Development. This will appropriately incorporate environmentally responsible materials and processes at the time of design/construction and to reduce energy consumption and adverse effects on the environment in both construction and operation which are financially viable. Approved ESD evaluation criteria shall be adopted for the stadium using either LEED guidelines or New Zealand Green Building Council's Green Star or alternatively the equivalent Australian Green Star recommendations.

4.1 Life Cycle Costing
The design and construction of the Stadium shall use a lowest life cycle cost (LCC) approach for all major elements.
A life cycle planning procedure will be used for the design. It is proposed that the latest version of Guidelines for Life – Cost Planning and Analysis of Buildings published by the Department of Public Works and Services in New South Wales shall be adopted in the advent of any suitable guidelines produced by the Western Australian Government.
During the design development stage the principles of LCC will be utilised to help optimise the choices of services equipment, sports lighting equipment, finishes, façade materials, and other applicable elements of the project.
An LCC plan for the whole project will be prepared during the construction documentation process, and should allow for regular updating throughout the process. The plan will form the basis of the final asset management plan, the operations and maintenance plan (O&M), and the sinking fund calculations. The plan will include costs of planned capital replacements, enhancements, major periodic maintenance, and routine maintenance and operational costs. The Consultants, Contractor and the client body shall draw up this plan during the course of the project.

4.2 Major Elements
At a minimum, the following LCC evaluations will be undertaken during the design documentation phase to the satisfaction of the client by the design team:
• Type of floor finish (e.g. carpet, tile, sheet vinyl, rubber)
• Type of ceiling finish (e.g. metal pan, plasterboard, mineral fibre)
• Type of sanitary fixtures (stainless steel versus vitreous china)
• Type of painted surface (on-going maintenance and re-painting needs)
• Type of gutters and downpipes (e.g. metal, copper, plastic)
In addition to the above components the contractor shall be responsible for meeting LCC criteria for the following components:
• Service elements (e.g. natural lighting, passive ventilation, air conditioning plant)

• Vertical Transportation (e.g. lifts, escalators)

4.3 Facility Life Expectation
The redeveloped stadium shall, with reasonable maintenance, be capable of having an operating life of at least fifty years. An Asset Management Plan and O&M manuals and standards will outline how the operating life of 50 years will be achieved. The contractor shall be responsible for the completion and compilation of the O&M manuals.

4.4 Energy
The Stadium shall be designed and shall be constructed to maximise the use of environmentally responsible materials and processes and to minimise energy consumption and adverse effects on the environment in both construction and operation. The design and construction of the Stadium will incorporate **principles of Ecologically Sustainable Development**

5.0 BENCHMARK COMPARISONS

Key design aspects of the functional requirements have are benchmarked against current trends in Australia and European stadia, which are:

- Suncorp Stadium, Brisbane
- Skilled Stadium, Gold Coast
- Westpac Stadium, Wellington
- Galphram Stadium, Huddersfield
- Hamilton,
- Jade Stadium, Christchurch
- Palmerston North,