Attachment B: QEC Indoor Courts Facility Concept Design

Queenstown Events Centre Indoor Courts Project

Concept Design Report

Document Prepared by Jasmax for
Queenstown-Lakes District Council
Contract number 225101.00
20th October 2026

Revision B

JASMAX

Contents

Date	Revision	Description
14/08/2026	Rev A	Issue for Comment
20/10/2026	Rev B	Text Updates

In collaboration with:

Stantec (previously Cosgroves)
Mechanical, Electrical, Hydraulics, Fire, Sustainability

Kotahi Studio
Structural, Civils

Marshall Day Acoustics
Acoustics

Southern Planning
Planning

Abley
Traffic Engineering

Engco
Geotec

Rhodes + Associates
Quantity Surveyor

Naylor Love
Early Contractor Engagement

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1. Executive Summary

1.1 Background

The proposed Queenstown Events Centre (QEC) Indoor Courts Facility addresses a long-standing and growing shortfall in indoor sports and recreation capacity across the Wakatipu Basin. Strategic planning undertaken since 2018 has consistently identified the need for additional indoor court provision to meet community demand, improve levels of service, and support population growth.

The project responds to substantial increases in participation across indoor sports, health and wellness activities, and community sporting groups, while also positioning QEC as a sub-regional sporting and events hub. A new four-court facility, combined with an expanded fitness centre and supporting amenities, will provide the capacity required to meet current demand and future growth, enable regional and national sporting events without displacing community use, and deliver wider social, health, and economic benefits to the district.

The investment will future-proof recreational infrastructure, improve operational performance, support community well-being, and help ensure Queenstown-Lakes maintain an appropriate level of service for residents and visitors over the long term.

1.2 Project Scope

The current Concept Design proposes a single-storey facility comprising approximately 6,100m² Ground Floor Area (GFA) and incorporating:

- Four regional-compliant indoor courts with multi court overlay
- Health and wellness facilities, including fitness and cycling studios
- Flexible multifunction rooms
- Entry foyer, reception and event support facilities
- Change rooms, toilets and family facilities
- Tournament and operational support spaces
- Storage and retractable seating infrastructure
- Back-of-house and plant areas
- Associated site works, landscaping and car parking

The facility has been designed to support both day-to-day community use and periodic larger-scale sporting activities.

Outside of core scope a number of additional scope items have been explored during Concept Design specifically with relation to adding sports overlay capability and sustainability initiatives including on-site water storage and solar. These currently sit outside the baseline estimate and a decision on their inclusion into Preliminary Design is pending Project Steering Group (PSG) review.

1.3 Project Vision + Objectives

Derived from the operational brief and through workshop interactions with QEC Operations team and the Queenstown-Lakes District Council (QLDC) Property Team a number of key objectives for the projective have been identified. These are;

- Provide a flexible and adaptable venue capable of accommodating multiple sports, recreation programmes and community sports events.
- Support increased participation in sport, recreation, health and wellness activities.
- Create a welcoming and accessible facility for people of all ages and abilities.
- Integrate effectively with the wider Queenstown Events Centre precinct
- Deliver operational efficiency, long-term durability and maintainability of the asset
- Maximise value for money while balancing functional requirements, operational outcomes and budget constraints
- Prioritise function over form - focussed on operational performance, flexibility, accessibility and long-term value, ensuring the facility works exceptionally well for users while delivering an appropriate architectural response
- Deliver sustainability and resilience through energy-efficient design, reduced whole-of-life carbon, climate-responsive architecture, and robust infrastructure that supports long-term community use

1.4 Methodology

The Concept Design phase adopted a collaborative, evidence-based and iterative methodology focused on validating the operational brief, testing value-for-money outcomes, and developing an integrated design solution.

The process was structured around the following stages:

- Feasibility, benchmarking and brief validation phase
- Establishing a preferred concept direction
- Coordinating and refining the design through multidisciplinary integration,
- Completing the Concept Design and reporting package

Throughout the process, the design team worked closely with QLDC Property, QEC Operations, consultants, key project stakeholders and the independent Quantity Surveyor to ensure operational requirements, budget constraints, technical performance and future growth aspirations were aligned.

Key activities included operational brief validation, test-fit planning, site and access analysis, massing studies, traffic and parking assessments, sustainability and resilience reviews, Safety in Design workshops and ongoing cost reviews.

Design options were tested against agreed evaluation criteria, with internal stakeholder workshops used to inform decision-making and refine priorities. The concept was progressively developed through integrated architectural, structural, civil, landscape and building services coordination, supported by constructibility and Early Contractor Involvement (ECI) input.

This approach ensured the preferred concept balanced functionality, operational efficiency, user experience, sustainability objectives and budget certainty while providing a robust foundation for the next stage of design.

1.5 Functional Brief validation

To ensure the project could be delivered within the approved budget while still meeting its core objectives, the design team undertook a comprehensive review of the operational brief in close collaboration with QLDC staff, facility operators the property team, PSG, consultants and independent quantity surveyor.

This process included testing the functional and performance requirements of each space, benchmarking comparable facilities, validating operational needs, and challenging assumptions around scope, size and levels of provision.

Through a series of workshops, the brief was refined to prioritise essential project outcomes, identify opportunities for multi-functional use, improve operational efficiency, and rationalise areas that exceeded the available budget.

Particular focus was placed on prioritising community sport needs, fitness and wellness requirements and whole-of-life operational considerations.

Key decisions through this phase to align the brief to budget have been:

- Revising building site location to retain use of existing carpark to offset costs for new site works construction impacting on the building scope.
- Refinement and priorities of brief against core spatial requirements particularly benchmarking and meeting Sport NZ Spatial Guidelines for the main indoor courts. This has informed the overall circa 6000m2 GFA allowance.
- Progressing a single storey building response driven by cost and operational efficiencies.
- Seeking efficiencies in GFA through benchmarking and testing of Health + Wellness areas and change room sizing. This has assisted in maintaining a GFA close to the target of 6000sqm, while also achieving 4 regionally compliant indoor courts.
- Identification of possible sports event overlays and the additional scope and budget uplifts that would be required to assist with decisions on funding and inclusion of additional items into Preliminary Design. These currently sit outside the projects budget estimate and decision is pending from PSG.

1.6 Health and Safety in Design

Health and Safety by Design (HSiD) is fundamentally about identifying and managing risks as early as possible in the design process, when the ability to influence outcomes is greatest and the cost of change is lowest.

Designers, architects and engineers are considered upstream PCBUs under the Health and Safety at Work Act 2015 and therefore have specific duties to eliminate or minimise risks through design.

Through a risk management process, we have worked with members of the operations and property teams to understand and identify any potential risks and hazards. Where possible risks or hazards identified have been eliminated, or appropriate controls have been established to mitigate or manage risks.

The purpose of HSiD is to:

- Eliminate hazards before they are built, installed or used.
- Reduce risks to workers, users, maintainers and the public throughout the asset lifecycle.
- Improve operational safety, health, well-being and productivity.
- Reduce the need for costly retrofitting or additional controls later in the project.
- Ensure health and safety considerations are integrated into good design rather than treated as a separate exercise.

An initial Safety in Design workshop, hazard identification and assessment of controls was completed during Concept Design. This has been documented in the Safety in Design Register that can be found in the appendix of this report. Ongoing Safety in Design workshops will be completed in the subsequent design phases with the wider project team and QEC.

1.7 Stakeholder Engagement

The design team have interacted with an agreed core group of stakeholders through the concept design phase. These have been undertaken through a series of 1 on 1 meetings, site visits, key workshops and interactives. The process has been iterative and collaborative with presentations, minutes and actions recorded and tracked through the design process.

Key stakeholders engaged with through concept;

- Project Steering Group
- QEC Operations
- QLDC Property
- QLDC Legal
- QLDC Planning
- NZ Basketball

RCP with QEC are managing external stakeholder interfaces and it is expected that the next phase will continue with internal key stakeholder engagement and will also incorporate a number of key external interactions where required in particular neighbouring landowners such as NZTA and QAC in advance of planning submission.

1.8 ECI Contractor

Naylor Love have been working with the design team through concept to provide input to the evolving design. Naylor Love have had representation at every Design Team meeting with a particular focus on the following contributions:

- Procurement and supply chain observations on plant, equipment and key risk procurement items (steel, HVAC)
- Suggestions to steel methodology and structural approach to support cost efficiency, supply chain procurement capability and lead times.
- Constructibility inputs particularly on the initial site selection review.
- Understanding and inputs around constructibility, access and issues when building adjacent to airport operations.
- Health and Safety in Design – Construction inputs.
- Low risk design – constructibility (external gutters, detail philosophy, junctions)
- Material selection – constraints on lead times, local sub-contractor market capability, transportation.

1.9 Sustainability

QLDC has committed to a climate and biodiversity strategy 2022 with the goal of reducing carbon emissions by 2040. The facility goal is to look for opportunities to increase energy efficiency and minimising ongoing whole of life costs and explore opportunities for reducing carbon in construction. A benchmark of Greenstar 4 certification has been identified in the Brief however no firm decision on seeking a formal rating has been made. A key direction is to find practical and economically feasible solutions that deliver long term operational benefits. The following initiatives have been explored through concept and key decisions on scope inclusion being made on review of total project budget estimate.

- Concept initiatives
- Use of air source heat pumps to meet domestic water heating loading Provision of VRF type air conditioning
- Mechanical ventilation utilising heat recovery where possible and economic
- Long life LED lighting and automated lighting controls where practicable
- Solar – scope being defined
- Smart carparking lighting control
- Warm roof and thermal envelope design
- Material selections
- On site storm water management

1.10 Concept Close Out + Next Steps

At the time of report writing the design team were working with internal stakeholders QEC/QLDC and the Project Steering Group to review and close out some residual decisions and scope items prior to Preliminary Design commencement. These will be assessed alongside the completed Cost Consultant reports and supplementary information provided by the design team to allow decisions on scope and preferred direction.

These items are:

- 6 court study requested by Council
- Inclusion and extent of sports event overlay into core scope and progression into the next design phase
- Inclusion of notable sustainable initiatives in particular solar, battery storage, centralised energy and on site water retention
- Direction on final carpark layouts (east or west)
- Gravity vs pumped solution for Sanitary Sewer from new building to existing main

The next design phase will commence with a primary focus on developing the design in preparation of the Designation Alteration and identify the preferred procurement pathway.

2. Context

2.1 Site Masterplan

The proposed Indoor Courts Facility is located within the Queenstown Events Centre (QEC) precinct in Frankton, the primary sports, recreation and events hub serving the wider Wakatipu Basin. Positioned adjacent to the existing indoor courts, aquatic centre, health and fitness facilities, and surrounding sports fields, the site is strategically located to leverage existing infrastructure, maximise operational efficiencies, and strengthen connections across the broader recreation precinct.

The development aligns with the intent of the QEC Masterplan reinforcing the precinct's role as the district's premier destination for community sport, recreation, health and major events, while providing capacity to meet the significant population and visitor growth anticipated across the Wakatipu Basin over coming decades.

Queenstown Event Centre Site

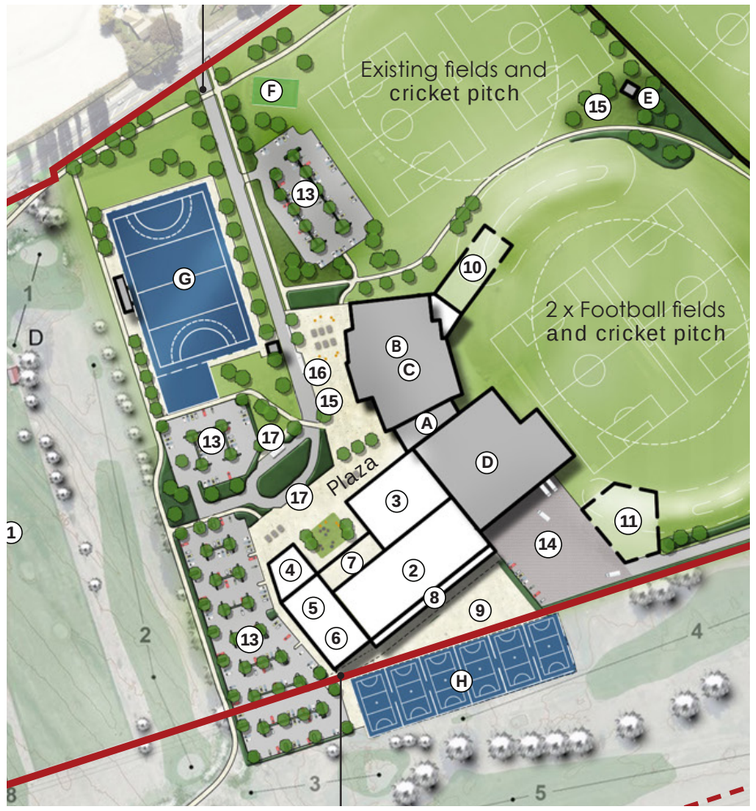


Site location

2.2 Site Masterplan

Masterplan evolution

2024 - Masterplan



The proposed masterplan expands the Queenstown Events Centre precinct by delivering a comprehensive indoor sports, recreation, and community hub while retaining and integrating existing facilities.

Key additions include four indoor courts, a health and fitness centre, climbing and squash facilities, expanded indoor cricket provision, shared clubroom and community spaces, and supporting storage and operational facilities.

The Queenstown Events Centre Indoor Courts Project forms the first step towards delivering the overall masterplan, defined by the 2025 Development Plan.

2025 - Development Plan

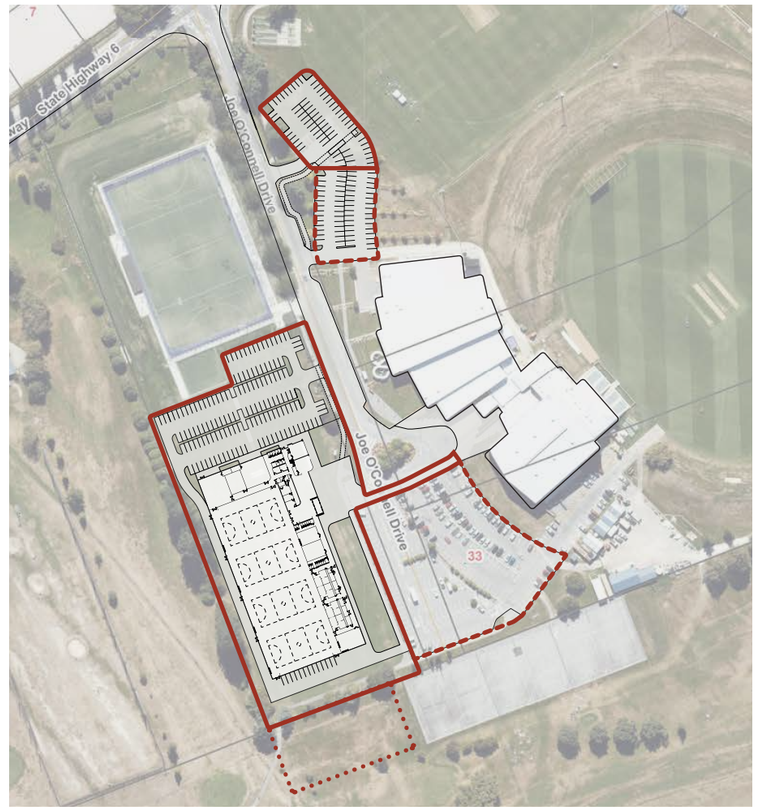


Following completion of the master plan (as issued in 2024) a prioritisation process was completed by QLDC/QEC to determine the development scope to meet immediate community needs. It was acknowledged at this time that the full QEC masterplan could not be implemented in one go and an initial stage of works was defined as:

- 4x indoor courts
- 800m^2 Fitness Centre
- Carpark Changes and Road Reconfiguration where required
- Plaza area at Entry
- Green Space, Hard paving and Landscaping

This formed the Development Plan as above which defined the scope of work for the Queenstown Events Centre Indoor Courts Project.

2026 - Proposed Site Concept Direction



Following engagement in September 2025, the design team and QEC undertook a review of the project scope and budget to ensure alignment between the proposed development and the available budget.

This process identified an opportunity to achieve significant cost savings and acheive the total project budget by relocating the facility to the greenfield site identified as *Scenario 2* during the feasibility stage. This option retains the existing car park, reduces impacts on existing site infrastructure, and minimises disruption to day-to-day operations during construction. It also reduces consenting risk by avoiding the need for a road stop to be put in place on Joe O'Connell Drive.

The outcomes of this review were presented to Council on the 5th May 2026, with Scenario 2 subsequently endorsed as the preferred approach to be progressed into Concept Design.

Pedestrian & Vehicle Movements

Public Pedestrian & Cycle Movements



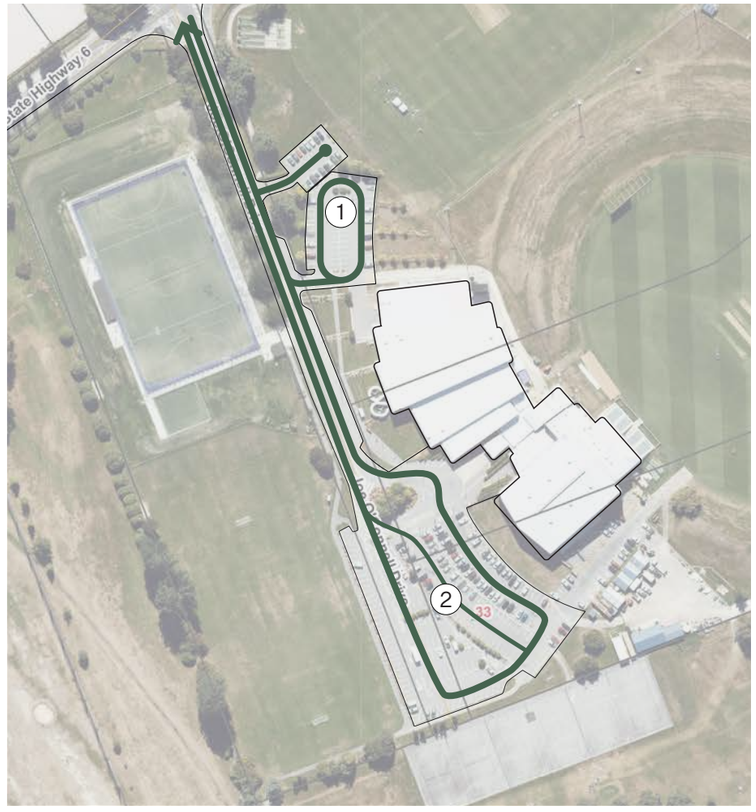
The primary entry to the existing building is centrally located on the south-western frontage, creating a key arrival node that provides access to the aquatics centre, health and wellness facilities, and the existing indoor courts. A network of footpaths circulates around the existing car park with an east-west crossing connecting the two sides of the carpark. The principal north-south pathway also forms part of the Queenstown Trails Cycle Network.

With the decision to locate the new facility on the greenfield site (Field 4), establishing a clear and intuitive connection between the existing and proposed building entrances will be critical. Legible wayfinding, strong pedestrian links, and a cohesive arrival experience will help users navigate seamlessly between the two facilities and support their operation as a connected precinct.

1 Existing Building Entry

Pedestrian and Cycle Movements

Public Vehicle Movements



Car parking is currently distributed across three existing car parks within the site. The primary car park is located south of the existing building and accommodates the majority of on-site parking demand. This is supplemented by two smaller parking areas situated adjacent to the existing cricket nets.

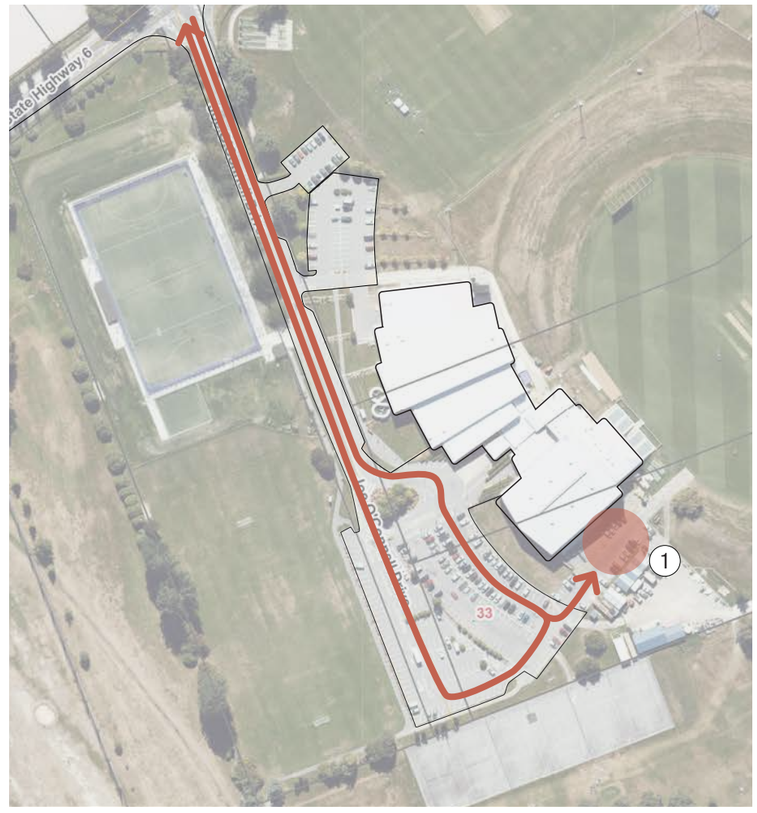
The southern car park has also been identified as being susceptible to flooding during major rainfall events. Existing storm water infrastructure appears to have insufficient capacity to adequately manage major events, resulting in reduced functionality of the parking area.

1 Cricket Nets Carpark

2 Primary Carpark

Primary Vehicle Movement

Back of House Vehicle Movements



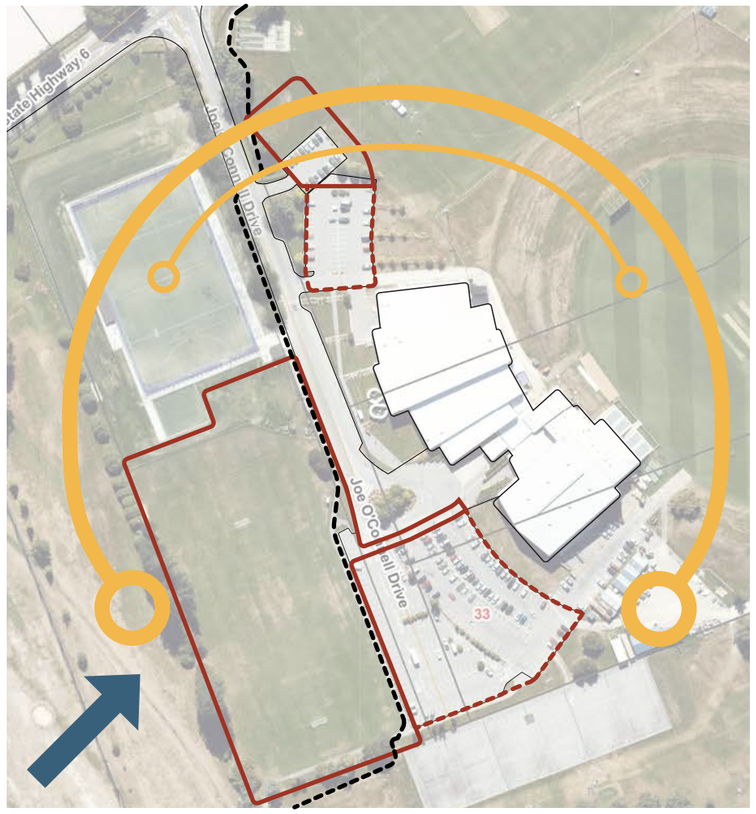
The primary service entry to the existing building is located to the south and is accessed via the same internal road network that serves the public car park. Initial vehicle tracking assessments have identified that traffic management measures are required to safely accommodate larger articulated vehicles manoeuvring through the site, particularly within the existing parking areas.

The service yard provides direct access to the indoor courts and adjoining storage spaces, supporting the day-to-day operation of the facility. As part of the wider assessment of back-of-house functionality, an additional study has been undertaken to review existing storage capacity and utilisation on the site. Refer to the Appendix for further details on this summary.

1 Existing Service Entry

Back of House Vehicle Movements

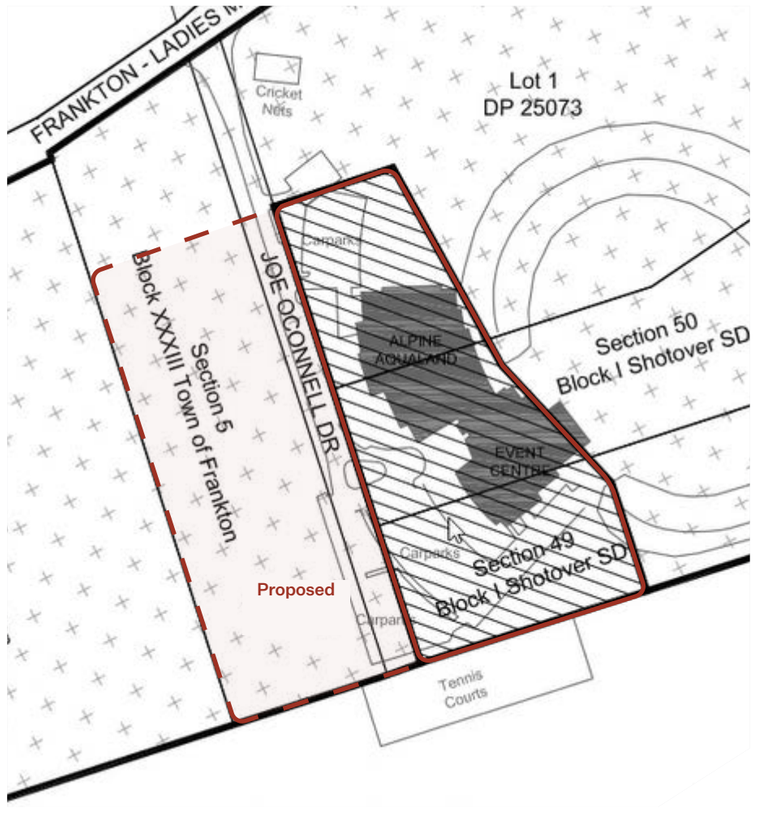
Environmental Overlay



The proposed site is predominantly north-east facing and exposed to prevailing south-westerly winds. Queenstown's significant seasonal temperature variations require careful consideration of both summer overheating and winter conditions, including ice and frost. Passive design measures, building orientation, and solar control strategies will be important to achieving year-round user comfort, optimising energy performance, and ensuring safe and functional external spaces.

- Site Boundary (Indicative)
- Prevailing Wind
- Winter Solstice
- Summer Solstice
- Queenstown Trails Cycle Network

Change in Designation



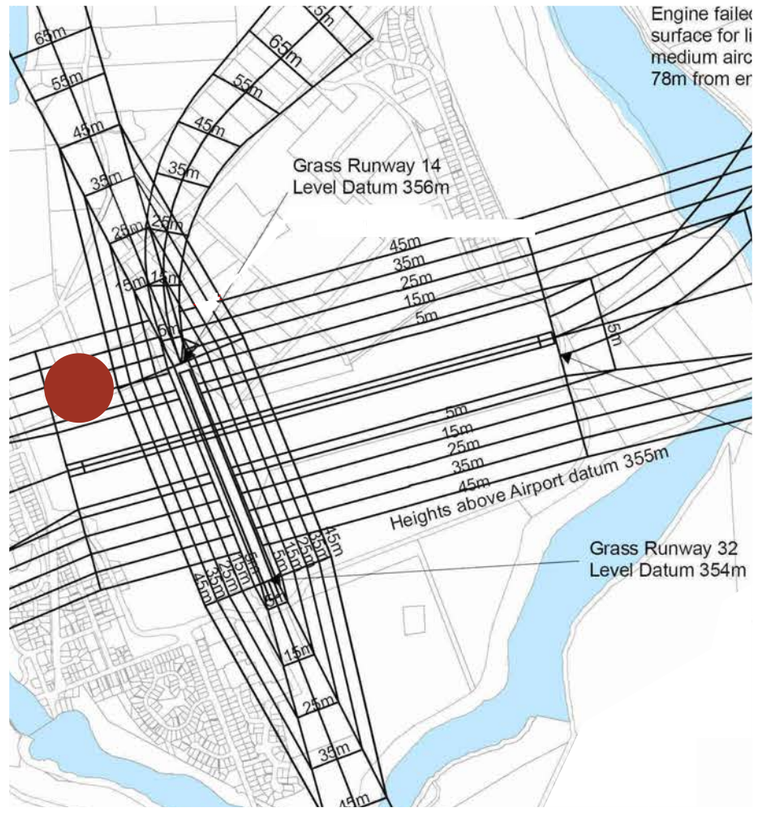
The current site designation identifies a Central Development Area(CDA) over the existing aquatics building and courts, permitting buildings up to 18m in height with a minimum 5m setback from legal roads.

Development is currently limited to the CDA shown above. To enable construction of the proposed new facility on the adjacent greenfield site, it is proposed to seek an alteration to Designation 29 rather than pursue a standard resource consent application. This would extend the CDA to include the proposed development area.

Waka Kotahi NZ Transport Agency and Queenstown Airport Corporation have been identified as affected parties and will be engaged with following completion of Concept Design to support formal approval of the designation alteration.

- Existing Designation
- Proposed Change in Designation

Queenstown Airport Flight Fan



The District Plan includes a flight fan associated with Queenstown Airport, which imposes restrictions on the height and location of future development in proximity to the runway.

As a result, the proposed facility, including associated elements such as roof structures, plant, and mechanical equipment, is subject to the height limitations defined by the flight fan. The current proposal is affected by a maximum height limit of approximately 15m across parts of the site.

Ongoing engagement with QAC will be required throughout the planning process to ensure the proposed development is compatible with airport operational requirements and does not adversely affect the protected airspace.

The team are awaiting an accurate site CAD digital file from QAC to verify compliance - the current assessment against printed information suggests the building complies with some residual tolerance to the overlay.

- Site location

3. Brief

3.1 Process

To enable the project to be delivered within the approved budget while continuing to meet its core objectives, the design team undertook a collaborative review of the operational brief with QEC Operations and QLDC Property teams.

Through benchmarking, operational testing, and a series of stakeholder workshops, the brief was refined to prioritise essential community & regional sport, fitness, and wellness outcomes. The resulting brief retains the project's strategic objectives while establishing an achievable scope to deliver for the Queenstown Lakes community.

In parallel, the design team investigated opportunities to optimise the building footprint and improve floor area efficiency to determine whether the additional technical infrastructure required for a show court and event-capable venue could be accommodated within the available funding envelope.

Through this process, a **Project Baseline** was established that delivers the key project outcomes to be delivered within the current approved budget. The assessment also confirmed that achieving an **Events-Capable** facility, including show court functionality and associated technical enhancements, would require additional funding beyond the current project budget. This has been summarised in the independent QS cost reporting.

3.1.1 Project Baseline (Concept Design Scope)

A fit-for-purpose, community-focused indoor sports facility that meets the core project objectives and can be delivered within the current funding envelope. This option forms the basis of the Concept Design and includes the facilities and infrastructure necessary to support day-to-day community use and regional sports competition.

Key Project Outcomes:

- Approximately 6,000m² facility
- Capacity for approximately 1,500 spectators/users
- Four regional-compliant indoor courts
- Health and wellness facilities
- Multifunction/community spaces
- Main entry lobby
- Reception and staff accommodation
- Changing rooms and public amenities
- Storage facilities

Budget:

Estimated project value approximately $46 million

3.1.2 Sports Events Capable

The facility is being prepared to enable sports events - hosting national and regional tournaments and other sporting leagues which have capacity requirements. The design team have taken advice from Sports NZ and enabled a seating capacity of 2000.

Project Outcomes being sought are:

- Venue capacity of 2,000 people
- Show court capability for feature games and sports events
- Mechanical ventilation, cooling & tempered air to courts to support events of up to 2,000 people
- Smoke extract to enable 2,000 people capacity

3.2 Benchmarking

A benchmarking exercise took place in Christchurch to support informed decision-making for the Queenstown Events Centre Indoor Courts Project through observation of comparable facilities as well as discussions with operators, facility managers, and project representatives.

The visits provided practical, real-world context to help the project team understand how similar facilities operate, the trade-offs inherent in their design and delivery, and the implications of different operational and facility planning decisions.

The site visits aimed to:

- Test emerging assumptions relating to facility scale, layout, and functionality.
- Understand how community participation and sports event requirements are balanced in practice.
- Identify lessons learnt and insights to inform project briefing and option development
- Gain a better understanding of operational challenges, opportunities, and cost.

Across two separate visits, representatives from the design team and QEC Operations staff visited three facilities in Christchurch that were identified as being particularly relevant to the project. These facilities provided examples of different approaches to planning, operating, and managing multi-use indoor sports and events venues.

Key observations:

- Strong thermal performance, including warm roof systems and reduced thermal bridging, is essential for comfort and efficiency.
- Local control of building services is critical for effective day-to-day operations.
- Ventilation strategies should balance mechanical systems with passive solutions, particularly in colder climates.
- Good acoustics are important for user comfort, communication, and event management.
- Well-designed staff facilities and amenities directly support operational effectiveness.
- Storage must be appropriately sized, accessible, and tailored to equipment needs, with value in purpose-built mobile storage solutions.
- Generous arrival, circulation, and marshalling spaces are important for managing large groups and events.
- If users are expected to dwell, comfort, acoustics, and a variety of furnishings are essential.
- Accessibility features should be highly visible, durable, and designed to support operational needs as well as compliance requirements.

Overview

Netsal Canterbury (Ngā Puna Wai)



Key Facts:

- Opened November 2023
- 10 international standard indoor netball courts with high-quality wooden sprung flooring
- Netball, volleyball, futsal, and rhythmic gymnastics
- Features include four changing rooms, public toilets, medical room, meeting rooms, a cafe, a mezzanine viewing area, and wall-mounted scoreboards
- Reception and office areas
- Two multi-use rooms and mezzanine event spaces for meetings or community groups
- There is no fitness studio or gym

Services features:

- LED Lighting
- Natural ventilation
- Polycarbonate panels for lighting
- Traditional ceiling insulation build up (cold roof)

Internal ceiling/structural height:

- External low point is 9m circa high point is 12m
- Internal clear is approximately 1m less than these dimensions

Selwyn Sports Centre



Key Facts:

- Opened May 2021
- 8 courts total, featuring both timber courts and polyurethane courts surface
- Netball, basketball, futsal, volleyball, badminton, pickleball, tennis, korfball, and floorball
- 240m mezzanine walking/running track, spin studio with ~25 bikes, and group fitness classes
- Multipurpose spaces, meeting rooms, change facilities, and on-site administration
- The Fitness studio undertakes a range of Les Mills programme as well as RPM classes although the fitness studio is not purpose built but utilising the multipurpose space

Services features

- LED Lighting
- Natural ventilation with some mechanical extract
- Radiant Heating panels
- Polycarbonate panels for lighting
- Kingspan roof (warm roof)
- Solar

Internal ceiling/structural height:

- Internal low point is 7.5m to portal knee

Mainpower Centre



Key Facts:

- Opened August 2021
- The facility includes seating for up to 700–1000 spectators
- The four full-sized courts accommodate badminton, basketball, futsal, korfball, netball, and volleyball
- Fitness Centre features a, fully equipped gym with Life Fitness/Hammer Strength equipment, plus, group fitness studios
- Amenities include a café, changing rooms, and, meeting/conference rooms
- Increased acoustic attenuation and power provisioned for sports event overlay
- 500 seat retractable seating bank

Services features

- LED Lighting
- Mechanical ventilation with passive cooling options.
- Radiant Heating panels
- Polycarbonate panels for lighting
- Kingspan roof (warm roof)
- Solar ready
- Show court enabled

Internal ceiling/structural height:

- 11m knee height

3.3 Single vs. Two Storey Building

Following the QEC Operations Workshop held on 29 May 2026, it was agreed that both the single-storey and two-storey options would be developed further to better understand their respective impacts on the site, operations, and project cost. The outcomes of this assessment would inform the preferred option to be progressed through to completion of the Concept Design phase.

The evaluation process included consideration of:

- Comparison of the proposed options and their impacts on the overall site, including future development opportunities
- Impacts on existing planning controls, including designation requirements and site-wide parking provisions
- Operational impacts, including integration with existing circulation routes and key building entrances
- Impacts on existing site infrastructure and services
- Back-of-house storage requirements and operational movements
- Cost implications

Refer to Appendix for *Options Study Report*

Core decision : Proceed with single storey

Benefits:

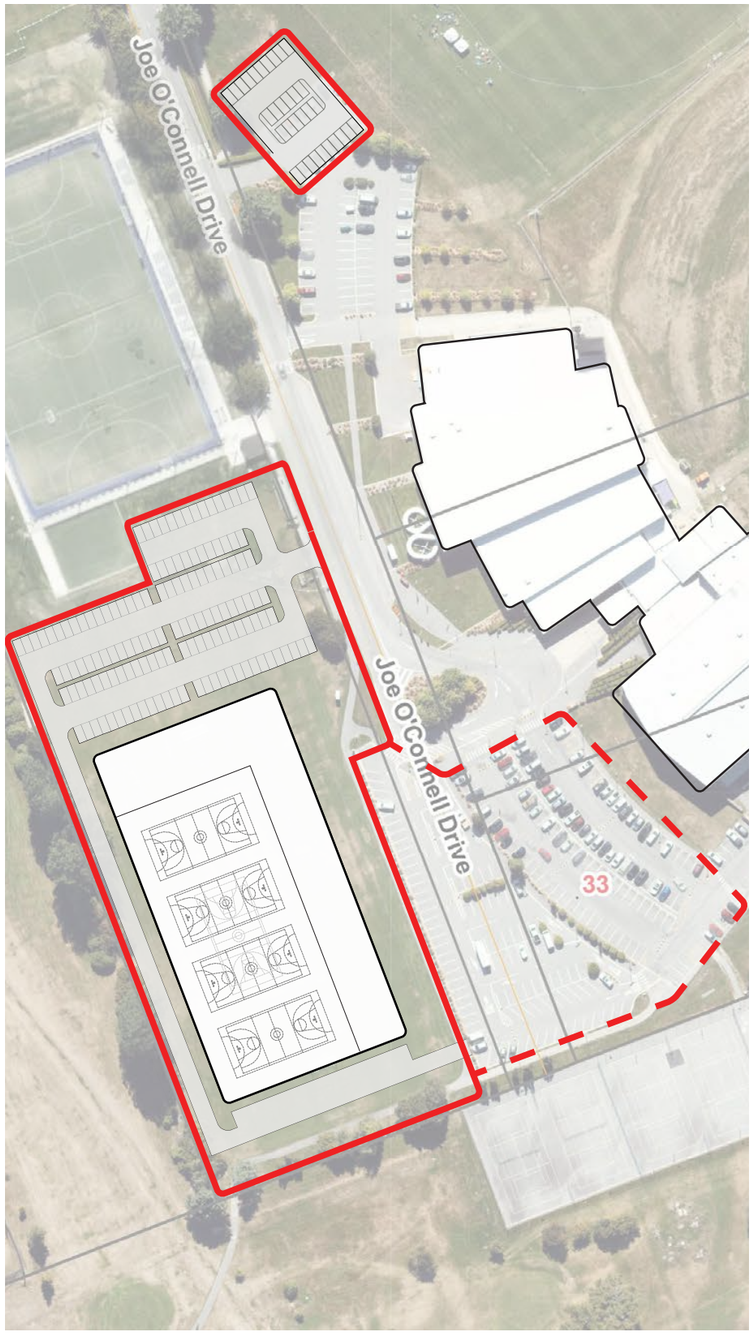
Operation

Having all functions on a single level reduces complexity in managing thresholds and passive observation of the facility and simplifies wayfinding for the user

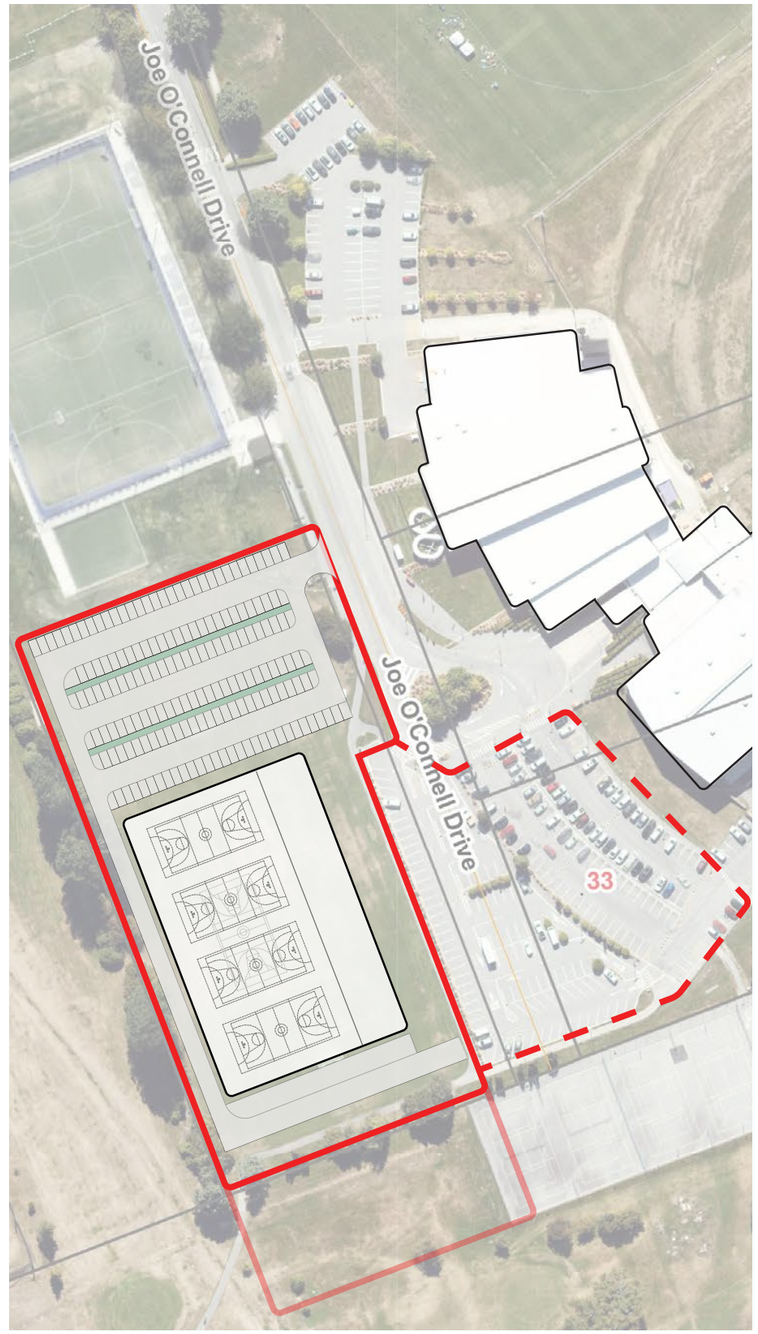
Reduces Cost Risk

By committing to a single level facility, the requirement for additional egress and performance demanded by the two storey facility is removed

Option 1: Single Storey Building



Option 2: Two Storey Building



* Carpark layout & numbers indicative only

Existing Carpark Remediation

Site Boundary (Indicative)

3.3 Single vs. Two Storey Building

Options Summary

Options Study Observations:

- Cost per square meter of building for a single or two storey option are similar
- Initial planning studies suggest additional GFA will be required for circulation and egress requirements within a two storey option
- For a single storey option, carparking requirements cannot be achieved within the current scope boundary
- Options to be considered:
  1. Use of QAC land as carpark expansion to south of building
  2. Find additional carparking elsewhere on site (e.g. extension to Cricket Nets Carpark)
- Two storey option offers greater opportunity for future expansion
- Operation, wayfinding and threshold management simpler in single storey option
- Two plant rooms likely required in single storey option
- Fire protection and egress strategy more complex for two storey option
- Single storey limits cost risk

Category	Single Storey Building	Two Storey Building
Site Efficiency Comparison of proposed site extents between options		
Planning & Traffic Impact on existing Designation and site wide carparking requirements		
Entrance Co-location Co-location of entries to buildings to achieve intuitive wayfinding		
Pedestrian Movement Interface with existing circulation and key building entries		
Carparking Additional carparking required to meet planning requirements		
Public Vehicle Movements Public vehicle movements between carparks		
Queenstown Trails Cycle Network Impacts on existing Queenstown Trails Cycle Network		
Back of House Storage Impacts on equipment movements between facilities		
Back of House Vehicle Movements Services Vehicle movements around site, between buildings and carparking		
Future Expansion Opportunities for future court expansion to proposed facility		
Services Strategy Efficiencies in services strategy		
Operations Impacts on day-day operational and threshold management		
Cost		

Proceed with Single Storey Option

Benefits:

Operation

Having all functions on a single level reduces complexity in managing thresholds and passive observation of the facility and simplifies wayfinding for the user

Reduces Cost Risk

By committing to a single level facility, the requirement for additional egress and performance demanded by the two storey facility is removed

Minimises impacts on GFA

Additional GFA likely required to facilitate circulation and lobbies dictated by a two storey option are removed

Risks:

Carparking

Carparking requirements dictated by the new facility cannot be achieved within current scope of work boundary. Additional funding may be required to achieve total carpark number required due to additional site works.

1. Indicative Building Footprint
   - Entry/Lobby
   - 4x Netball Courts
   - Health & Wellness
   - Multifunction Spaces
2. Proposed Carpark - North
3. Proposed Carpark - Cricket Nets Extension
4. Proposed Service & Back of House Area
5. Proposed Service & Maintenance Lane
6. Entry Plaza
7. Existing Carpark Storm water Remediation only

Out of Scope

8. Existing Back-of-House Area + Staff / QLDC Carparking
9. Existing Service Yard

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* Carpark layout & numbers indicative only

Existing Carpark Remediation

Site Boundary (Indicative)



Area Schedule

The accommodation schedule below summarises the area schedule established at the commencement of Concept Design, and subsequently informed by workshops with QEC Operations and QLDC Property throughout the Design Phase defining the baseline scope for the new courts facility.

During Concept Design, the focus has been on identifying area efficiencies to enable additional technical requirements necessary to support events. However, following confirmation of the requirement for four regionally compliant netball courts, the building gross floor area currently sits at approximately 6,100m². Note the gross floor area includes operational briefed areas plus allowances for circulation and plant.

The intent is to further refine this area during the Preliminary Design phase.

Adjacencies Diagram

The adjacency diagram below tests the preferred co-location of spaces identified through the operational brief, stakeholder engagement, and through seeking planning efficiencies to reduce overall Gross Floor Area (GFA).

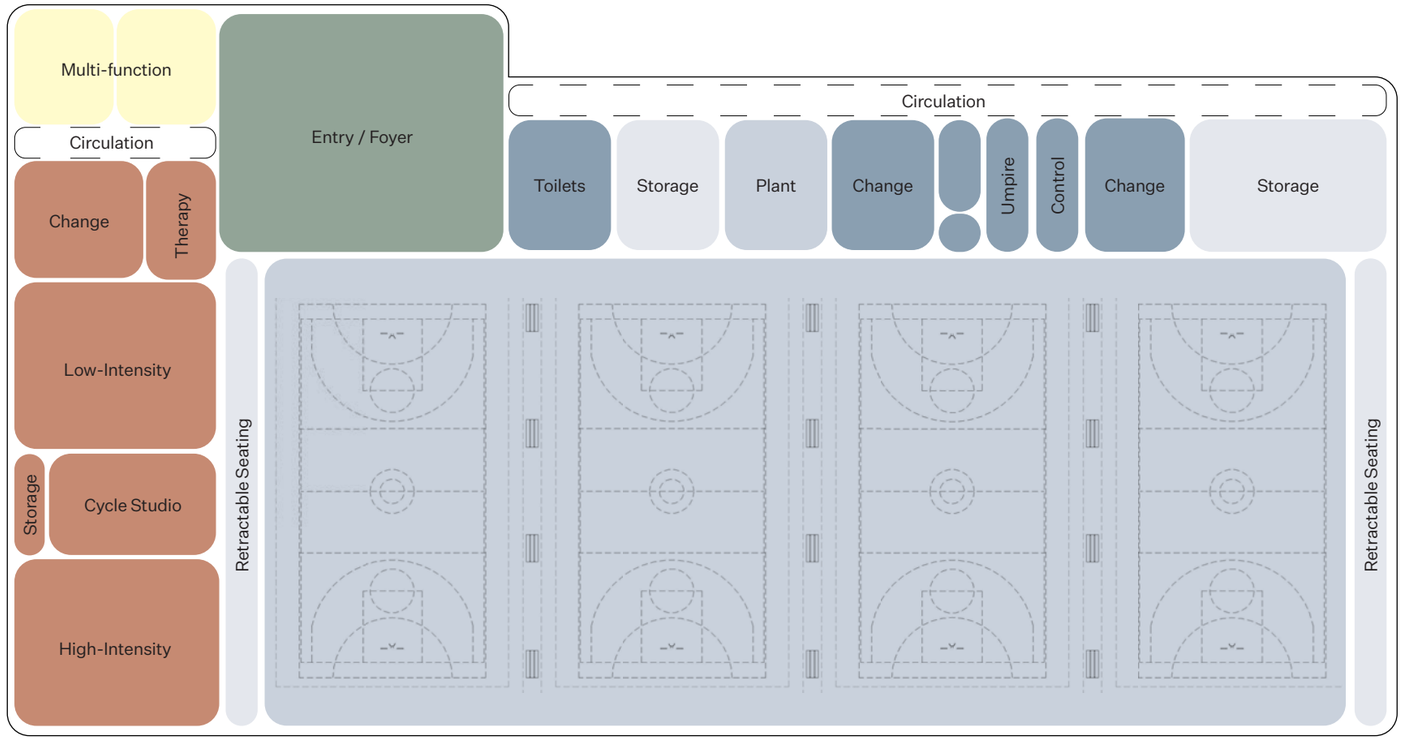
Organised around a central entry node, the diagram establishes a centralised arrival point while supporting the operational requirements of the facility to manage the key thresholds to the indoor courts, public toilets, change facilities, health + wellness spaces, and multi-function meeting spaces. Operationally this is key to enable efficient staffing (and reduce operational costs), while maintaining clear visibility of the various activities taking place in the facility.

Primary circulation is consolidated into a single spine extending from the entry node, providing direct access to all key ancillary spaces. A secondary circulation route also connects from the entry node, providing direct access to the Multifunction and Health + Wellness spaces, enabling independent operation from the courts facility when required. This arrangement balances operational flexibility, user experience, and spatial efficiency while supporting a range of day-to-day and event-based operational modes.

Refer to Appendix for the
Concept Design Functional Brief & Area Schedule

Proposed Area Schedule

Area Breakdown	Briefed Area (sqm)
4x Netball Courts	3580
Storage	300
Sport Control Rooms / Umpires Rooms	80
First Aid / Cleaning	32
Change Rooms / WCs	480
Entry Foyer & Reception	325
Multifunction Space + Kitchenette	150
Health & Wellness	692
Additional Area identified as required:	
Staff Office & Staff Room	50
Total Net Floor Area:	**5689**
Allowance for Circulation (15%)· Excludes Courts	320
Allowance for Plant (15%)	320
Indicative Gross Floor Area:	**6329**



3.5 Occupancy + Toilet Calculations

New Zealand Building Code Requirements

The proposed indoor courts facility has four primary use modes identified within the project brief, which form the basis for determining the sanitary fixture requirements:

- Indoor Courts
- Health + Wellness
- Multifunction Spaces
- Staff Facilities

Based on the occupancy calculations derived from these functions in accordance with NZBC G1/AS1 Table 4, the estimated day-to-day building occupancy is approximately 1,460 people. Actual occupancy during normal operation is expected to be lower, with this figure representing a peak occupancy scenario.

Assumed peak occupancy: **1,460 people**

Total toilet number required (NZBC G1) **36**

To support the anticipated operational use of the facility and provide a reasonable distribution of amenities throughout the building, toilet facilities have been strategically located across the various activity zones.

The proposed provision comprises:

- **Indoor Courts Change Rooms:** Four change rooms, each containing four gender-specific toilets, providing 16 toilets in total
- **Public Toilet Facilities:** Two centrally located unisex toilet blocks, each containing seven toilets, providing 14 toilets in total
- **Health + Wellness Area:** Two additional unisex toilets are provided within the Health + Wellness space
- **Accessible Toilets:** Six unisex accessible toilets are distributed throughout the facility within the Health + Wellness, Staff, and Public areas

Total toilet provision within Concept Design: **38**

Assumptions:

- As agreed through stakeholder engagement, urinals are not provided
- Toilet calculations are based on the requirements of NZBC G1/AS1
- The facility is assessed as a stand-alone building, and sanitary provision has been calculated to meet the requirements of the proposed new facility only
- Existing buildings and occupancies elsewhere on the site have not been considered or assessed for compliance
- Occupancy calculations are based on the building functions outlined in the project brief and the corresponding occupancy loads identified in NZBC G1/AS1 Table 4

Courts

Building Use (NZBC G1)	Places of Active Recreation	
Assumed Occupancy (based on NZBC G1/AS1 Table 4)	Type:	Gymnasia
	Area:	3300m²
	Occupancy:	**1155**

Single Sex Facilities only with unisex accessible

Female Toilet Pans	11
Female basins	5
Male Toilet Pans	10
Male Basins	6
Unisex Accessible	2

Unisex Facilities only

Unisex Cubicals	28
Unisex Accessible	2

Health+Wellness

Building Use (NZBC G1)	Places of Active Recreation	
Assumed Occupancy (based on NZBC G1/AS1 Table 4)	Type:	Fitness Centre
	Area:	700m²
	Occupancy:	**140**

Single Sex Facilities only with unisex accessible

Female Toilet Pans	2
Female basins	1
Male Toilet Pans	2
Male Basins	2
Unisex Accessible	1

Unisex Facilities only

Unisex Cubicals	4
Unisex Accessible	1

Multifunction

Building Use (NZBC G1)	Club Room	
Assumed Occupancy (based on NZBC G1/AS1 Table 4)	Type:	Seating/Tables
	Area:	150m²
	Occupancy:	**135**

Single Sex Facilities only with unisex accessible

Female Toilet Pans	2
Female basins	1
Male Toilet Pans	2
Male Basins	1
Unisex Accessible	1

Unisex Facilities only

Unisex Cubicals	3
Unisex Accessible	1

Staff

Building Use (NZBC G1)	Staff Facilities	
Briefed Occupancy		Up to 30
	Occupancy:	**30**

Unisex Facilities only

Unisex Cubicals	1
Unisex Accessible	1

Total:

Unisex Toilets Total	36
Unisex Accessible	5

3.4 Occupancy + Toilet Calculations

Event Requirements

The proposed distribution of toilets throughout the public areas of the building summarised below:

- **Indoor Courts Change Rooms:** Four change rooms, each containing four gender-specific toilets, providing 16 toilets in total
- **Public Toilet Facilities:** Two centrally located unisex toilet blocks, each containing seven toilets, providing 14 toilets in total
- **Accessible Toilets:** Four accessible toilets distributed within the public circulation areas

Total toilet number within public areas **34**

This provision is sufficient to support events of approximately 1,500 people, based on the occupancy assumptions and sanitary fixture calculations undertaken in accordance with NZBC G1/AS1.

During project briefing workshops, it was agreed that the building's maximum occupancy would be governed by the sanitary fixture requirements of NZBC G1. This approach avoids the need to provide additional floor area and sanitary facilities solely to accommodate infrequent events with occupancies exceeding 1,500 people.

However, should QEC wish to host events with occupancies exceeding the 1,500 people in the future, it was agreed that the fire engineering design would be based on an event load of 2,000 people. This approach provides flexibility for future operational scenarios, including the development of a show court configuration or stand-up event format within the indoor courts space. While sanitary provision has been optimised to support the day-to-day operation of the facility, the fire design will retain the ability to accommodate larger event occupancies if required in the future. In this scenario, QEC will also need to bump-in additional toilets to cater for the additional load beyond 1,500 people.

Assumed peak occupancy day-to-day (NZBC G1): **1,460 people**

Fire Design Event Capacity: **2,000 people**

Event - 1000px

Building Use (NZBC G1)	Sports Venue	
Occupancy		1000
	Total Occupancy:	**1000**

Single Sex Facilities only with unisex accessible

Female Toilet Pans	9
Female basins	5
Male Toilet Pans	8
Male Basins	6
Unisex Accessible	2

Alternate: Unisex Facilities only

Unisex Cubicals	20
Unisex Accessible	2

Event - 1500px

Building Use (NZBC G1)	Sports Venue	
Occupancy		1500
	Total Occupancy:	**1500**

Single Sex Facilities only with unisex accessible

Female Toilet Pans	14
Female basins	7
Male Toilet Pans	13
Male Basins	7
Unisex Accessible	2

Alternate: Unisex Facilities only

Unisex Cubicals	30
Unisex Accessible	2

Event - 2000px

Building Use (NZBC G1)	Sports Venue	
Briefed Occupancy		2000
	Total Occupancy:	**2000**

Single Sex Facilities only with unisex accessible

Female Toilet Pans	18
Female basins	9
Male Toilet Pans	17
Male Basins	9
Unisex Accessible	2

Alternate: Unisex Facilities only

Unisex Cubicals	**40***
Unisex Accessible	2

*Additional 6 unisex toilets required to meet 2000 person capacity

4. Building Proposal

4.1 Site Planning

Proposed Site Plan

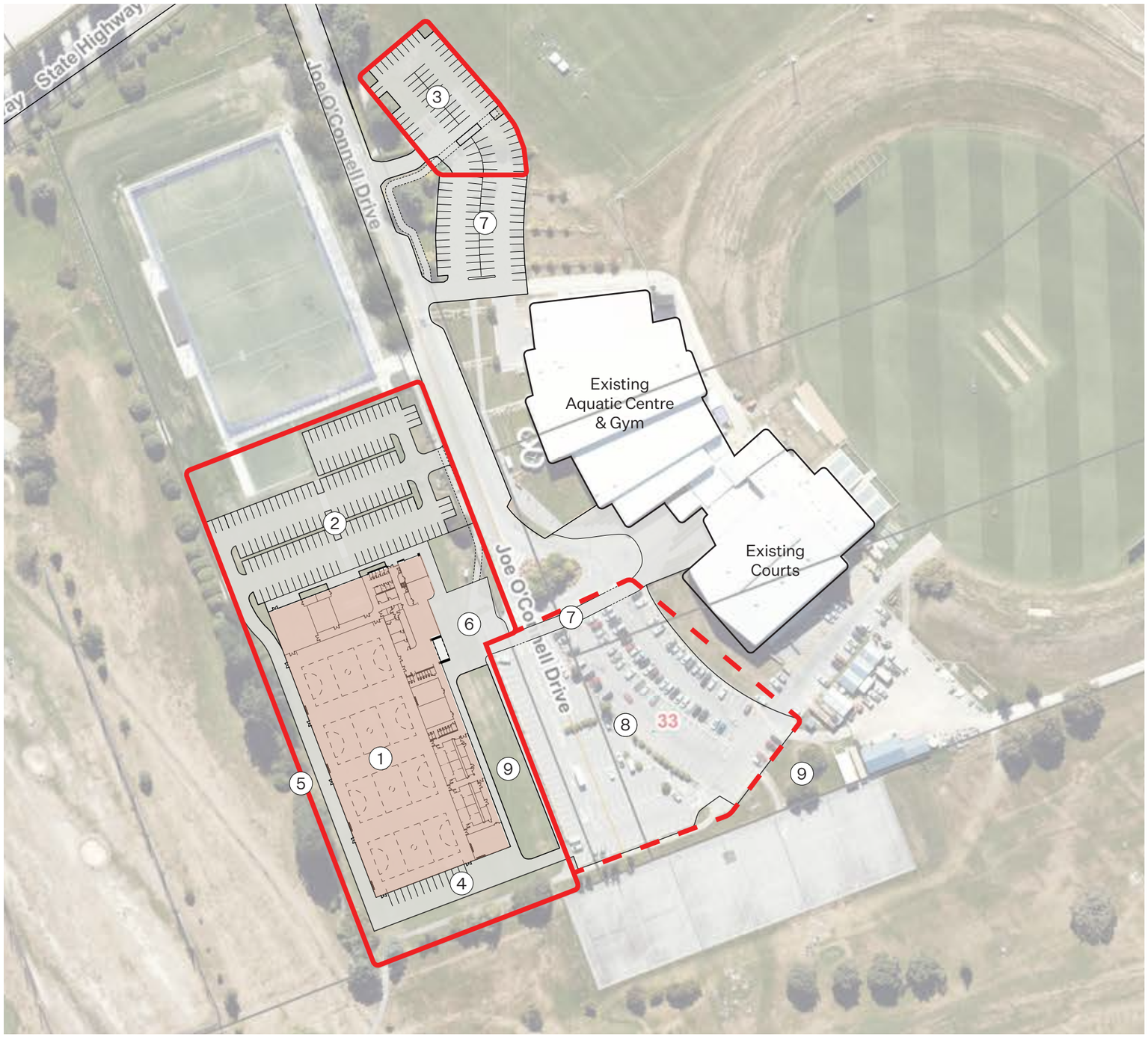
Through briefing workshops with QEC, it was identified that a welcoming and intuitive arrival experience, combined with a clear connection to the existing building, would be critical to the success of the new facility. These elements would improve wayfinding across the precinct, enhance the visitor experience, and ensure accessible routes are maintained throughout the site.

The proposed site plan responds to these priorities by providing a direct, accessible, and visible route between main entrances, supported by an efficient arrival plaza to establish a clear front door for the new facility. Additional parking is consolidated adjacent to the entrance, providing access to the indoor courts, Health + Wellness facilities, multi-function spaces, and the existing hockey field.

Operationally, the layout places back-of-house functions toward the rear of the building, reducing potential conflicts between service vehicles and public users while maintaining efficient servicing and day-to-day operations. This prioritises back-of-house connection between the existing and new facility.

A continuous service lane is proposed to the rear of the building, creating a loop road that enables efficient circulation for service and delivery vehicles. as well as level access into the new courts facility for back-of-house operations and event loading. Additional parking capacity is achieved through the extension of the existing cricket nets car park, providing increased parking supply with minimal disruption to existing site activities.

Minor works are proposed to the existing carpark to improve vehicle circulation, limit cross-over with pedestrian traffic and remediate existing flooding issues.



1. Indicative Building Footprint
2. Proposed Carpark
3. Proposed Extension to existing Cricket Nets Carpark
4. Proposed Service & Back of House Area
5. Proposed Service & Maintenance Lane
6. Entry Plaza
7. Improved Pedestrian Connection between Buildings
8. Existing Carpark Storm water Remediation only
9. Proposed Storm water Remediation

* Carpark layout & numbers indicative only

Existing Carpark Remediation

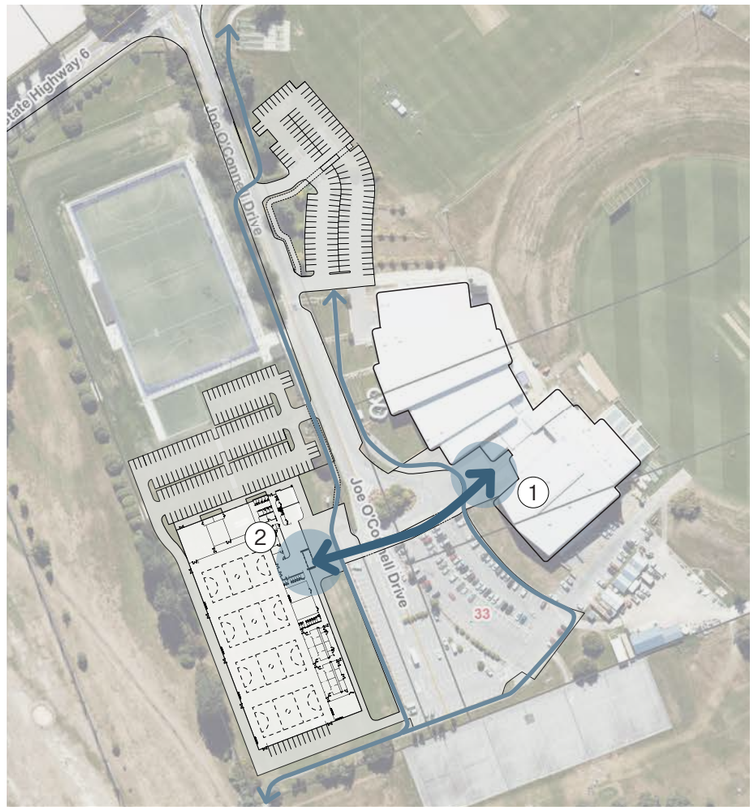
Site Boundary (Indicative)

Proposed Building

4.1 Site Planning

Pedestrian & Vehicle Movements

Pedestrian Movements



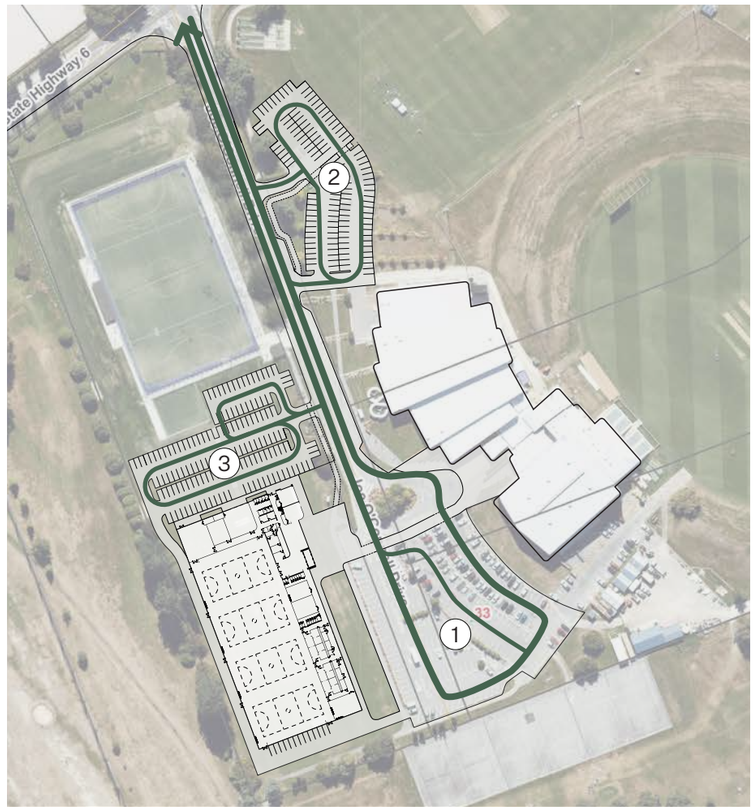
The primary pedestrian link enhances the existing pedestrian crossing to create a direct and legible connection between the existing and proposed building entrances.

A new entry plaza located to the north-east of the proposed facility reinforces the arrival experience, providing a welcoming transition between buildings and a focal point within the wider campus. The plaza benefits from favourable year-round sun, contributing to user comfort and supporting its function as a key gathering and circulation space particularly for larger sporting events.

1. Existing Building Entry
2. Proposed Building Entry

Pedestrian and Cycle Movements

Public Vehicle Movements



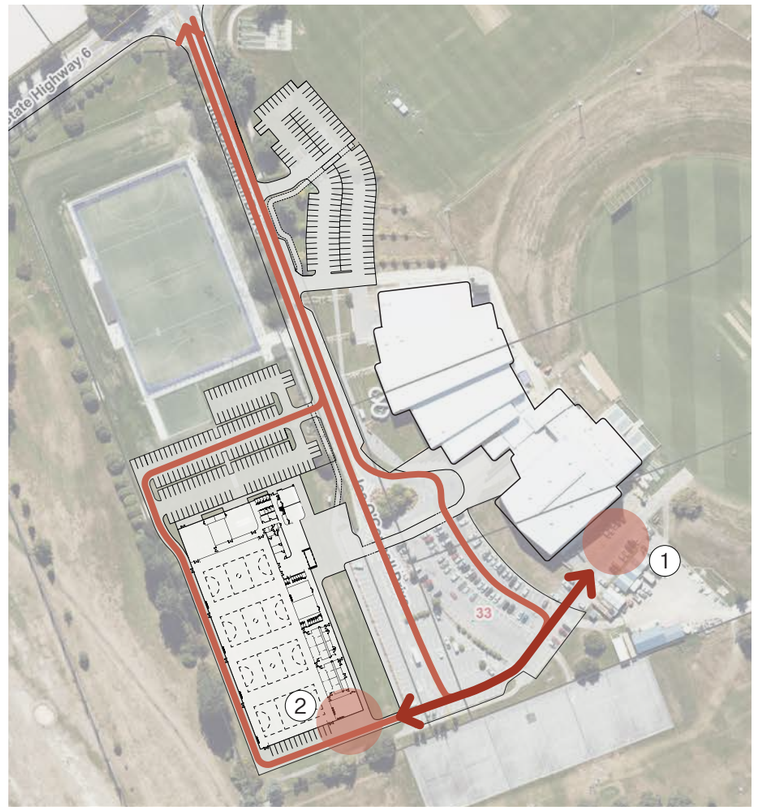
A new parking area located to the north of the facility will accommodate the primary parking demand associated with the proposed building, with accessible parking spaces located adjacent to the entry plaza to support equitable access. The northern car park also provides direct access to the existing hockey field, enhancing functionality and shared use across the wider campus. To support the overall parking requirements of the precinct, the existing car park adjacent to the cricket nets will also be expanded .

Minor reconfigurations to the existing car park are proposed to improve internal circulation, reduce potential pedestrian and vehicle conflict points, and enhance vehicle wayfinding.

1. Existing Carpark
2. Modified existing Cricket Nets Carpark
3. New North Carpark

Primary Vehicle Movement

Back of House Vehicle Movements



The primary service entry to the new facility will be located to the south and co-located to the existing service area of the existing building. Like the existing building, it will be accessed via the same internal road network that serves the public car park.

The service strategy is further supported by a perimeter access road that accommodates larger service and delivery vehicles, ensuring convenient circulation through the site. This route also enables direct event and operational access to the courts, supporting a range of servicing, maintenance, and event-related functions while maintaining clear separation from primary pedestrian areas.

1. Existing Service Entry
2. Proposed Service Entry

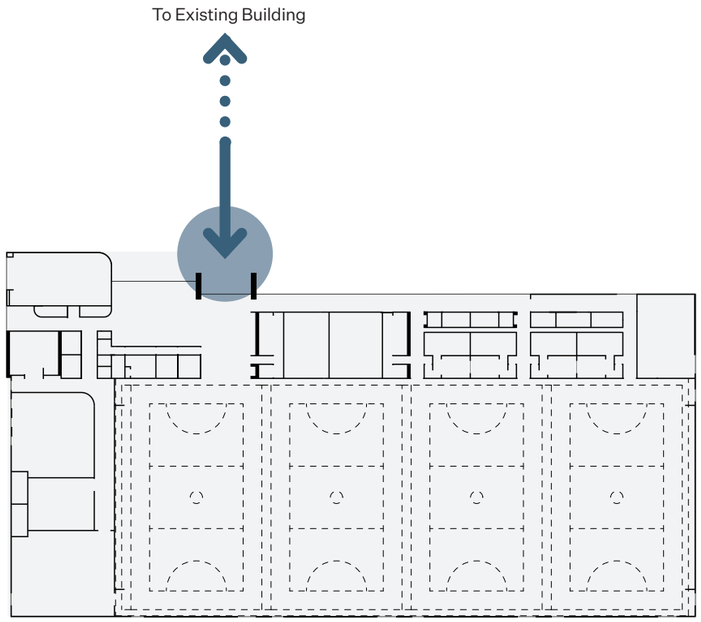
Back of House Vehicle Movements



4.2 Design Response

Key Planning Moves

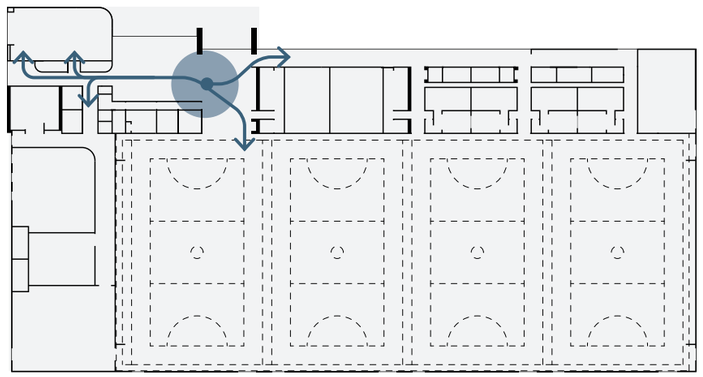
Access



The location of the main entrance has been prioritised to establish a strong pedestrian connection with the existing facility, providing intuitive wayfinding between buildings and creating a clear and direct circulation route for users.

This connection is reinforced through the landscape design, which responds to and extends the existing pedestrian crossing network across the car park. Together, these elements create a legible and accessible arrival sequence, strengthening integration between the new facility and the wider QEC precinct.

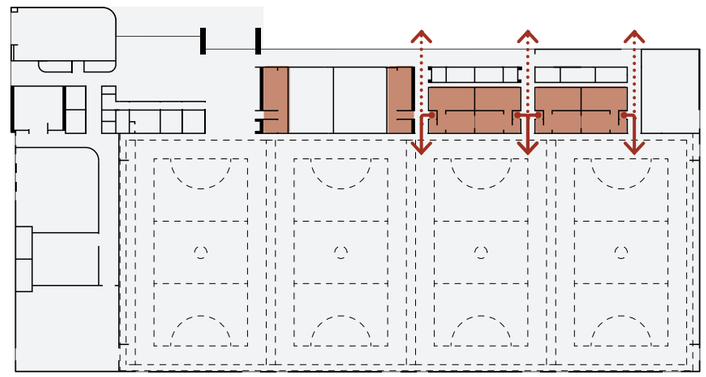
Reception Node



The reception node, located at the entrance to the main lobby, forms a pivotal point within the building plan. Strategically positioned at the intersection of the facility's primary circulation routes, it enables QEC staff to effectively oversee and manage the building's various functions while providing a welcoming point of arrival for visitors.

The reception also serves as an important threshold for access control, allowing managed entry to key areas of the facility, particularly the Health + Wellness spaces and Multifunction areas.

Change Rooms & Toilets



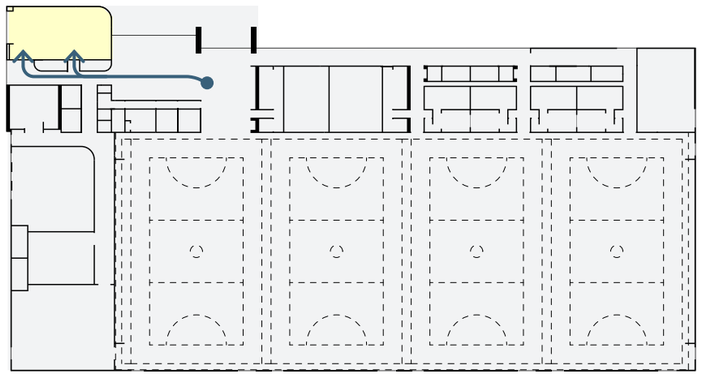
Change rooms are co-located along the eastern edge of the building and are designed to operate either as four individual changing facilities or as two larger combined change rooms to accommodate larger travelling teams and tournament requirements. Direct access to the indoor courts is provided via the adjacent circulation corridors, enabling efficient player movement while minimising conflicts with public circulation routes.

Provision has also been made for external access to the change rooms, allowing them to operate independently from the main building where required. This provides additional flexibility for QEC during major outdoor tournaments and events, enabling the facilities to support increased demand for changing amenities and toilet provision without impacting the operation of the wider building.

4.2 Design Response

Key Planning Moves

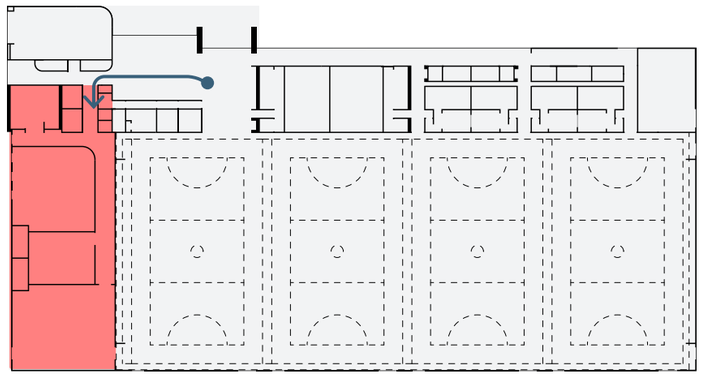
Multifunction



The multifunction spaces are accessed directly from the main entry lobby, maintaining a strong visual connection to the reception to support supervision and access control.

Designed for flexibility, the spaces can operate as a single function room or be divided into two smaller meeting rooms using operable partitions, with the ability to open directly into the lobby for larger events and gatherings. Independent external access from the north enables the spaces to function separately from the courts facility when required, supporting a range of operational and event scenarios.

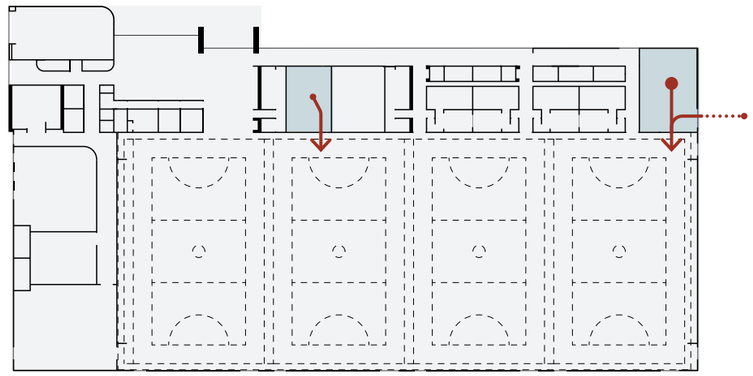
Health + Wellness



The Health + Wellness spaces are accessed directly from the main entry lobby and maintain a strong visual connection to reception, enabling effective supervision and access control without the need for dedicated staffing.

All Health + Wellness functions are located beyond a controlled access point, creating a clear separation between public and membership-based activities and allowing these spaces to operate independently from the wider facility when required.

Storage



Courts storage is provided in two locations, both with direct access to the courts to support efficient facility operations. A centrally located store serves day-to-day sports equipment and operational needs, while a larger southern store adjacent to the service area accommodates event, community, and tournament-related equipment.

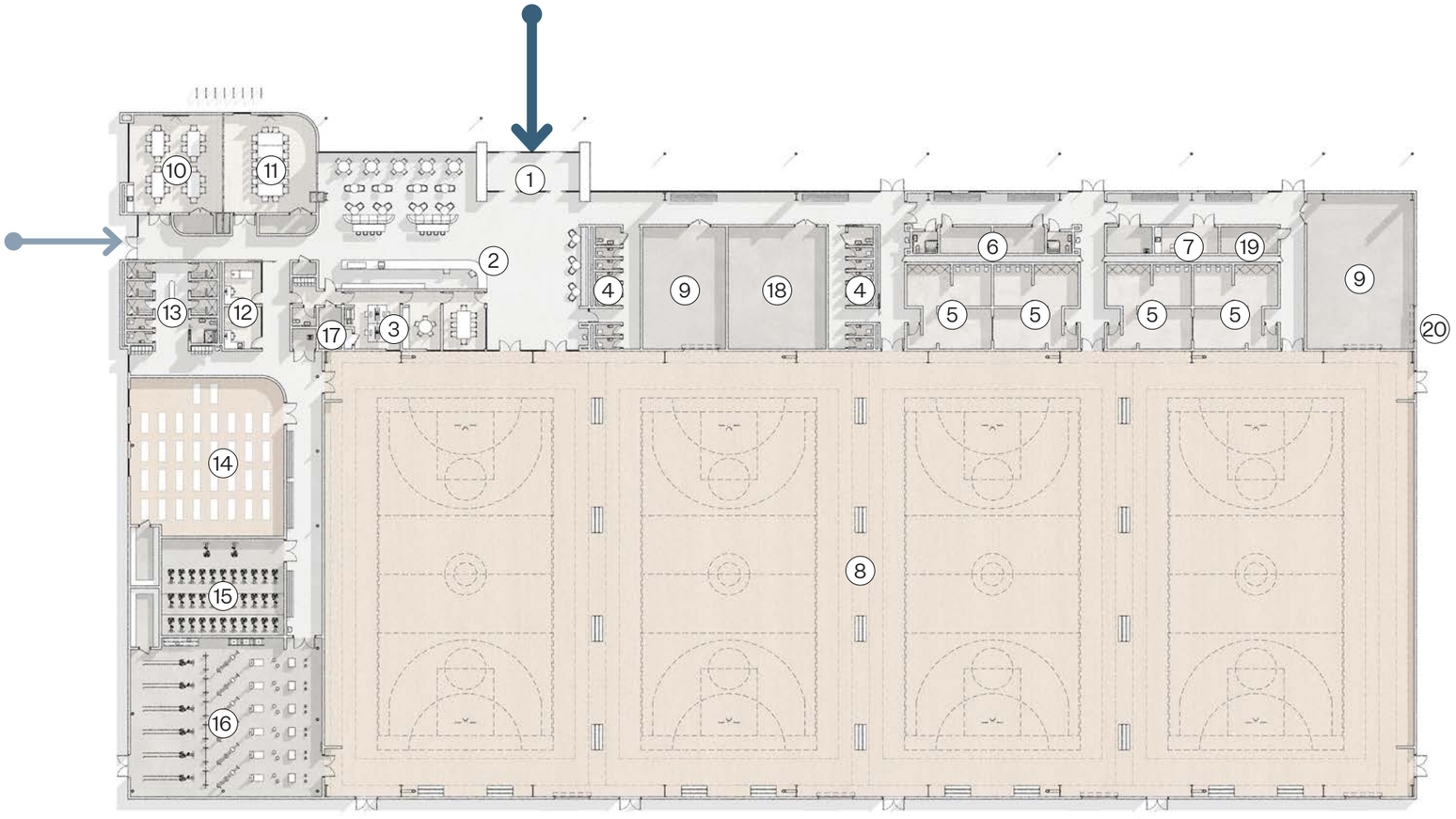
The southern store also provides operational flexibility, with potential to function as a swing space during major events, including temporary catering support when required.

4.3 Proposed Plans

Ground Floor Plan

The total ground floor area is approximately 6,100m^2 and is arranged on a single accessible level, with level thresholds provided throughout the building to support universal access and ease of circulation.

The final finished floor level has not yet been confirmed and will be determined through further site investigations, noting the existing waste water connection to the south of the site has imposed constraints on a gravity fed system. For this reason a pumped (and tanked) solution is being considered to minimise overall impact on the building level, and existing



Indoor Courts & Ancillary Spaces

1. Wind Lobby
2. Reception + Entry Lobby
3. Administration Office
4. Public Toilets
5. Change Rooms
6. Family Rooms
7. First Aid
8. Courts
9. Storage

Multifunction

10. Multifunction Room 1
11. Multifunction Room 2

Health + Wellness

12. Physio / Consult Spaces
13. Change Rooms
14. Low Intensity Studio
15. Cycle Studio
16. High Intensity Studio

Plant and Loading

17. Comms
18. Mechanical/Hydraulic
19. Electrical
20. Service Access

4.3 Proposed Plans

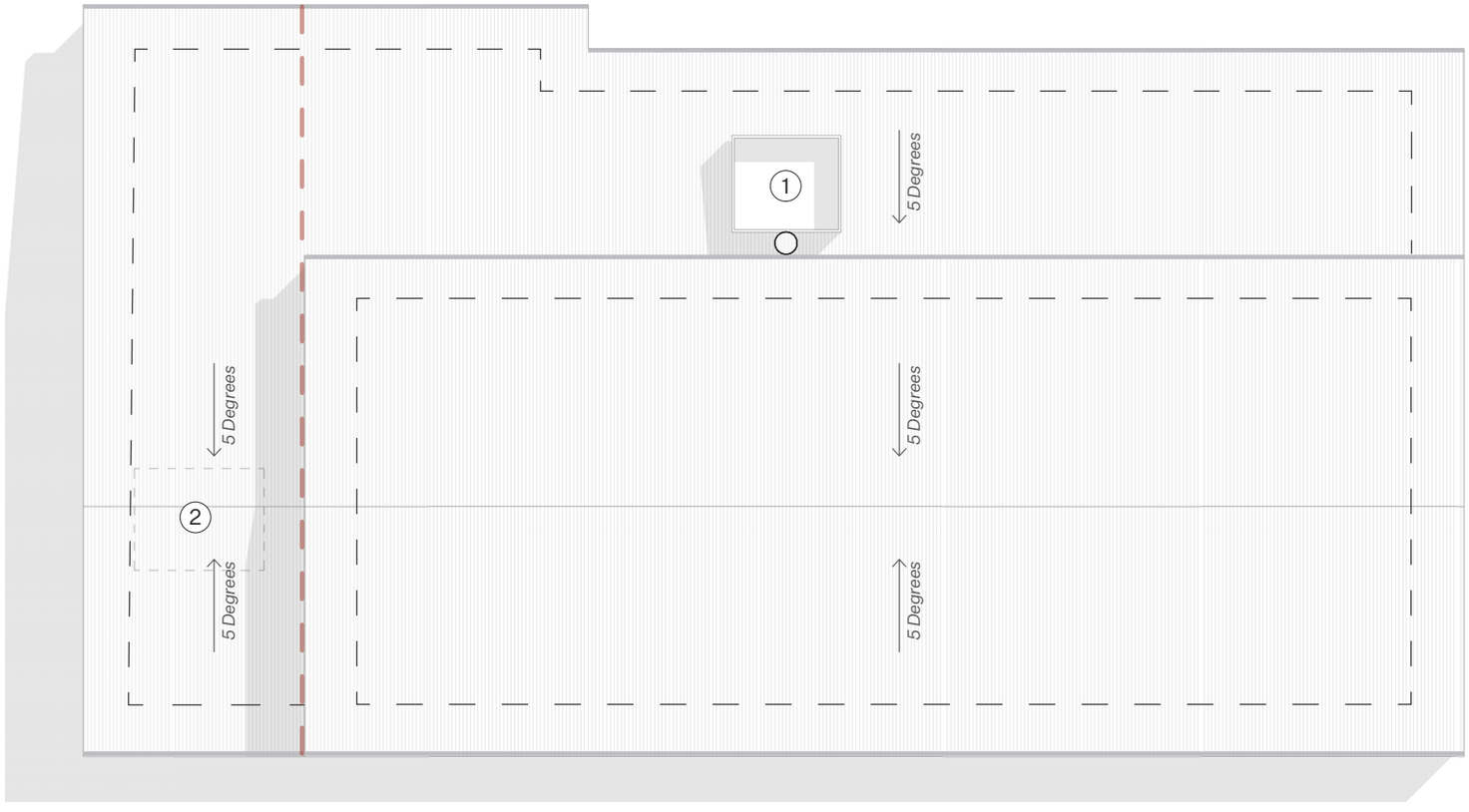
The roof is proposed as a warm roof system with a minimum pitch of 5 degrees. As discussed with the QLDC property team, gutters will be external, and eaves will be incorporated to provide additional weather protection where practical.

External plant equipment will be limited within the external plant deck located above the internal plant room, accommodating roof-mounted chillers and other mechanical equipment as required. This will be shrouded by a louvred enclosure with acoustic performance to be determined through Preliminary Design.

Roof access will be provided via the external plant deck, with access to the upper court roof areas achieved by a monkey-toe ladder system or similar. A perimeter fall-restraint system is proposed to facilitate safe maintenance of the gutters.

Within the current budget envelope, the building will be designed to be solar ready only, with additional funding required to facilitate solar install and energy storage if required.

Roof Plan



Plant

1 External Plant Deck

2 In-ceiling Health+Wellness Plant

Access Ladder from Plant Deck

Fall Restraint Line to Perimeter

External Gutters

Seismic Gap

4.4 Entry Lobby

Entry Lobby

The north-eastern entry lobby is envisaged as the principal public arrival point to the facility, establishing a clear and legible entry sequence and acting as the primary reception node for access to the courts, health and wellness facilities, and multifunction spaces.

The lobby is designed to support a range of informal furniture settings that encourage both short-term occupancy and extended dwelling.

Cafe Kiosk

To further activate the space and enhance the arrival experience, a satellite coffee kiosk is proposed, operating in conjunction with the main café within the existing building, providing coffee, cabinet food and cold drinks, contributing to the lobby's role as a community focused space. The brief for the kiosk is to be further developed and refined during the Preliminary Design phase.

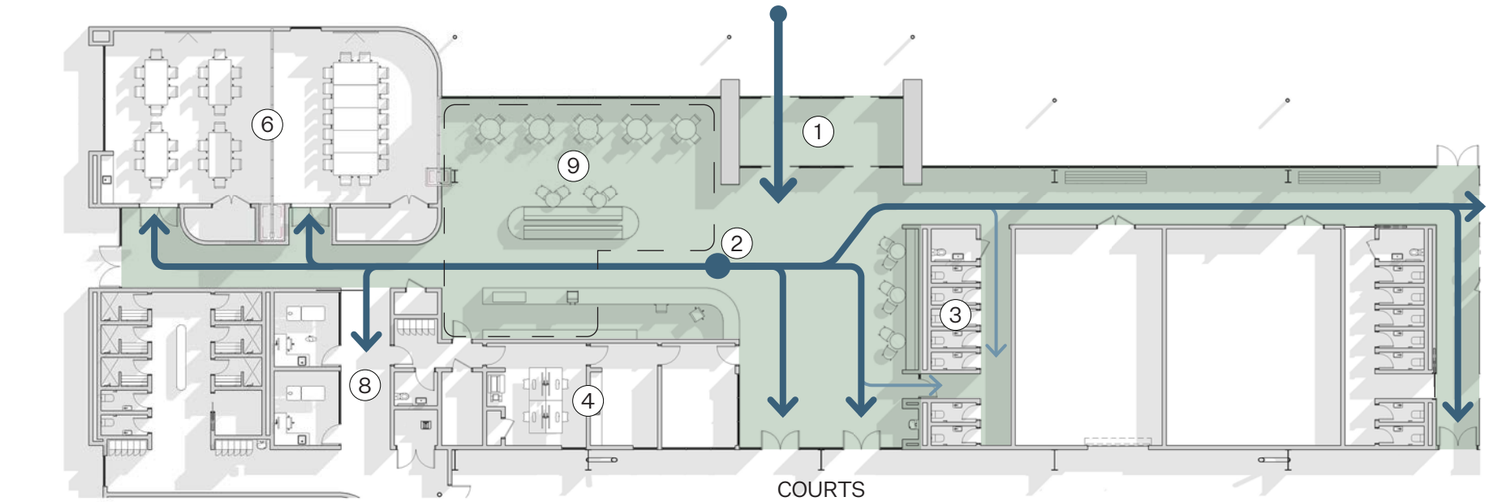
Staff Spaces

A staff office is located behind the main reception and includes a meeting room, kitchenette, and workspace for four staff. Dedicated staff amenities, including lockers and a toilet, are provided with access from both the lobby and Health + Wellness spaces to support safe and efficient staff circulation.

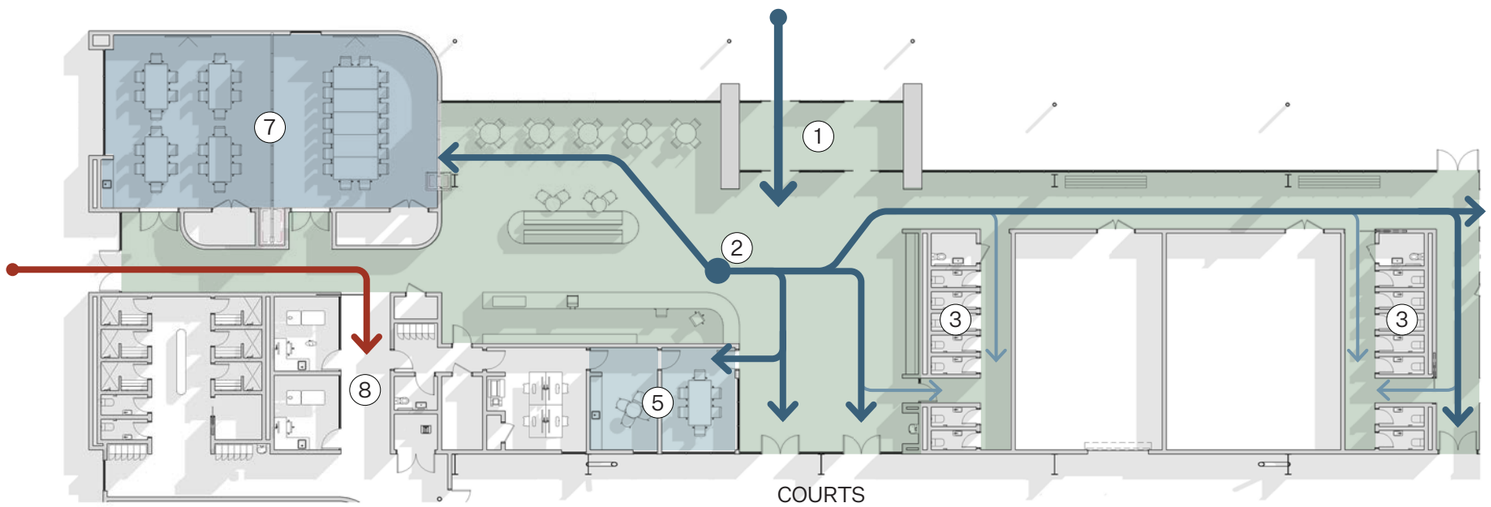
Tournament Mode

In tournament mode, furniture within the primary circulation zone can be removed to increase capacity for larger groups. The staff meeting room and kitchenette can be independently secured and repurposed for tournament control, providing direct visibility to the courts, while having connection to the entry lobby.

Day-to-day Operation



Tournament Mode



1. Wind Lobby
2. Reception + Entry Lobby
3. Public Toilets
4. Administration Office and Meeting Space
5. Tournament Office & Kitchenette
6. Multifunction Space
7. Tournament Support/Teams Space
8. Health + Wellness
9. Cafe Kiosk

4.5 Sports Courts

Community vs. Regional Compliance

	Sport NZ Community Specification	Fully Compliant Regional Court
Length	34.5m	37.6m
Width	18.25m	24m
Height	7.5m	9m
Court Footprint	630m²	902m²

From Sport NZ National Indoor Active Recreation and Sport Facilities Strategy to meet regional specifications for the 4 key sports identified - Netball, Basketball, Volleyball and Badminton

Direction to proceed with Regional Compliance

In pursuing area efficiencies, the design team worked with QEC to investigate opportunities to reduce the overall court footprint. Benchmarking identified precedents where reductions had been achieved through minimising shared run-off zones.

However, following further review, the decision was made to proceed with four regionally compliant courts. As netball has the largest spatial requirements, it establishes the minimum court dimensions for the facility per court.

A clear internal height of 9m has been confirmed to satisfy regional volleyball and badminton requirements. This establishes a minimum clearance zone over all courts, requiring all building services and suspended equipment to be located above the 9m clear height.

Note: The signage zone identified in the netball compliance diagram is incorporated within the structural zone in the proposed plan.

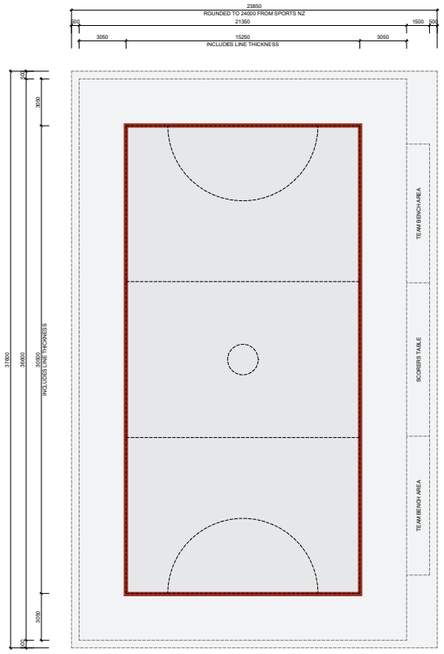
Key Sports:

The following sports have been identified as key sports to be catered for within the new facility:

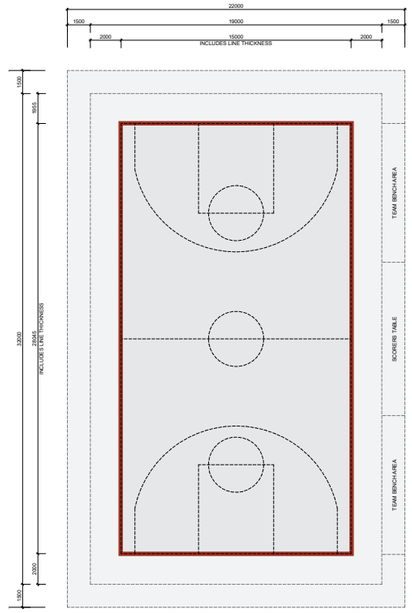
- Netball
- Basketball
- Volleyball
- Badminton
- Table Tennis
- Indoor Cricket
- Pickleball

This list is seen as a minimum delivery for the new facility with additional sports likely to be added as popularity changes over time. Court markings and hierarchy are to be determined through Preliminary Design.

Netball Court Compliance



Basketball Court Compliance



Planning Dimensions to meet Regional Compliance:

Length of Court	30.5m
Width of Court	15.25m
Safety run-off zone	3.05m
Signage Zone	0.5m
Team Bench/Scorers Area	1.5m
Total plan dimensions per court:	**37.6x24m**

Length of Court	28m
Width of Court	15m
Safety run-off zone	2.0m
Signage Zone	1.5m
Team Bench/Scorers Area	1.5m
Total plan dimensions per court:	**35x22m**

Access

Primary access to the courts is via the main lobby, with a secondary circulation route running along the eastern façade. Changing facilities are co-located with the courts and provide direct access for team sports.

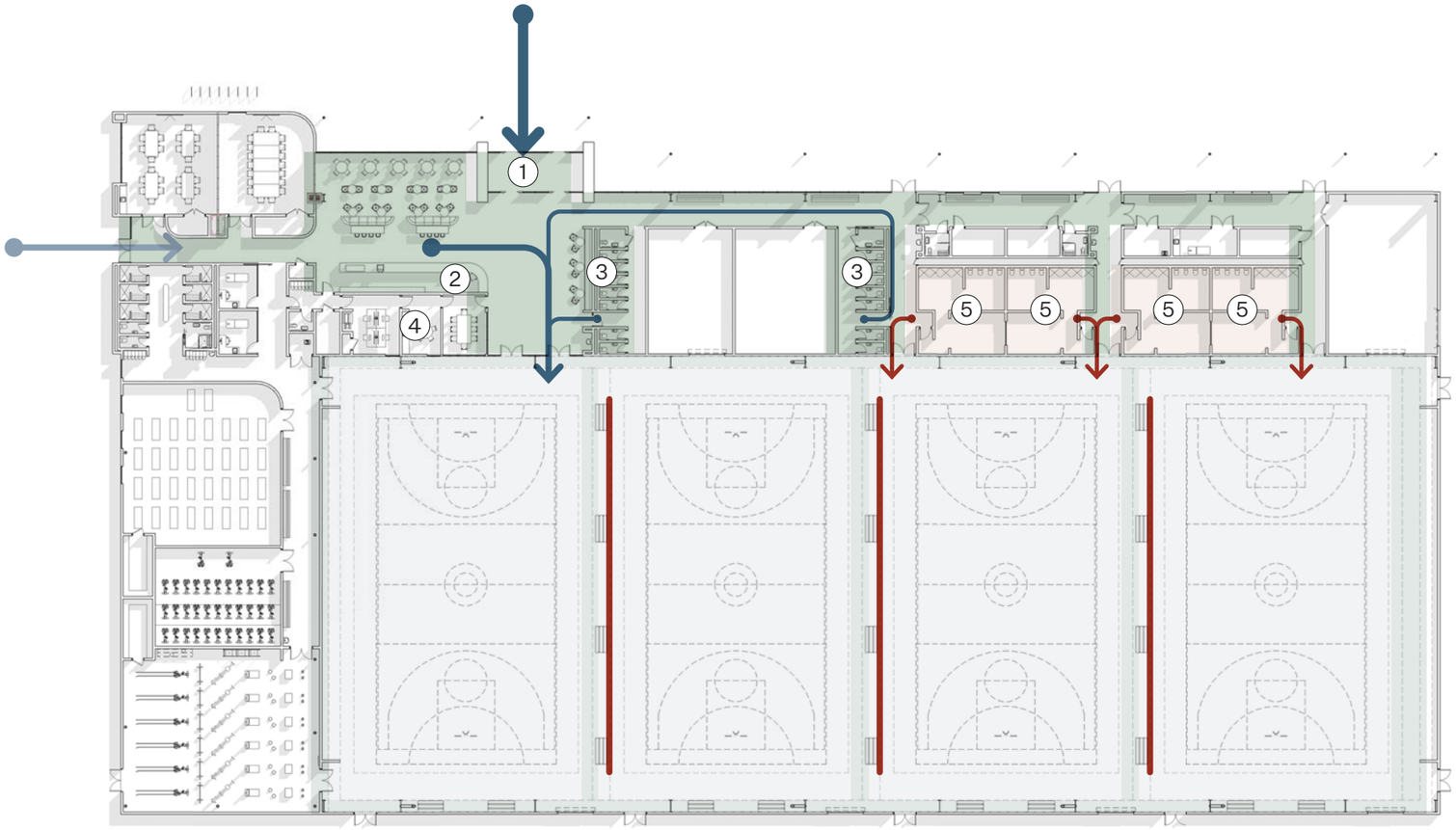
Courts Operation

In day-to-day operation, the facility provides four courts for community use. Court dividers located between individual courts enable multiple sports and activities to operate concurrently within the hall. Consideration will be given to the layout and rationalisation of court markings to maximise operational efficiency and minimise conflicts between sports, ensuring court availability is optimised during concurrent use.

Spectator zones

The structural zone around the perimeter of the courts provides an opportunity for tip-and-roll seating to support spectator and informal viewing. These units can also be repositioned between courts as required to accommodate different use modes.

Ground Floor Plan



1 Wind Lobby
2 Reception + Entry Lobby
3 Public Toilets
4 Administration Office and Meeting Space
5 Change Rooms
Circulation
Court Dividers
Storage
Retractable Seating Storage
Courts

4.5 Sports Courts

Sports Equipment & Retractable Seating

Sports Equipment

An indicative sports equipment schedule has been developed based on the key sports identified in the brief and insights gained from benchmark facility visits. Key considerations include:

- Secondary structure to be provided independent of the primary grid to accommodate court divider systems between individual courts.
- Court dividers to incorporate a solid lower 2m section to provide visual separation between courts and activities when deployed.
- Day-to-day basketball hoops to be roof-mounted, drop-down systems with operation controlled from the staff office.
- NBL requirements necessitate the provision of moveable basketball hoops, which will require dedicated storage when not in use.
- Equipment specific trolleys operationally allow for quick and easy turn-over of sports with minimal staff.

Refer to appendix for indicative schedule and costing

Storage

Storage is divided into two key areas, both with direct access to the courts to support efficient operation of the facility. The centrally located storage area is intended to serve as the primary store for sports equipment and day-to-day operational requirements, providing convenient access for staff, clubs, and facility users.

A secondary storage space is located to the south of the building and is positioned adjacent to the exterior service area. This store provides capacity for additional event, community, and tournament-related storage, while its proximity to the service area provides efficient loading and unloading

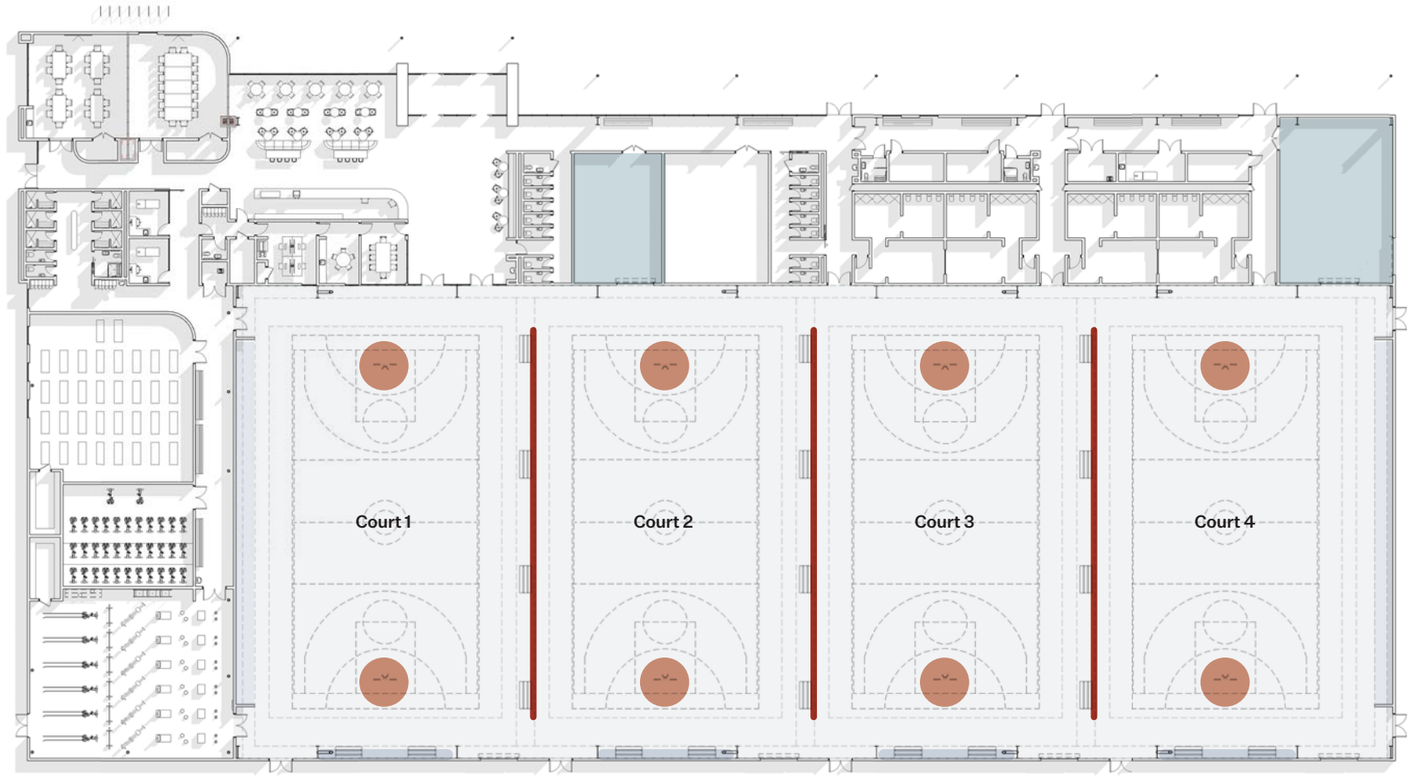
Retractable Seating

A storage zone to the north and south of the courts has been provisioned for the storage of two banks of 750 seats. The northern unit is proposed to be a fixed retractable, while the southern unit would be moveable to achieve future ‘show-court’ modes on Court 2.

Note: The retractable seating units are not provisioned within the basebuild scope or budget.

Refer to appendix for indicative design and costing

Ground Floor Plan



Drop-down Basketball Hoops

Court Dividers

Storage

Retractable Seating Storage

Courts

4.6 Multipurpose Space

Proposed Plan

The multifunction spaces are accessed directly from the main entry lobby, with a strong visual and operational connection to the reception area to support supervision and access control. The spaces are designed to operate either as a single large function room or as two smaller meeting spaces through the use of operable partitions. The layout also allows the rooms to open directly into the main lobby, providing flexibility for larger gatherings, pre-function activities, and community events.

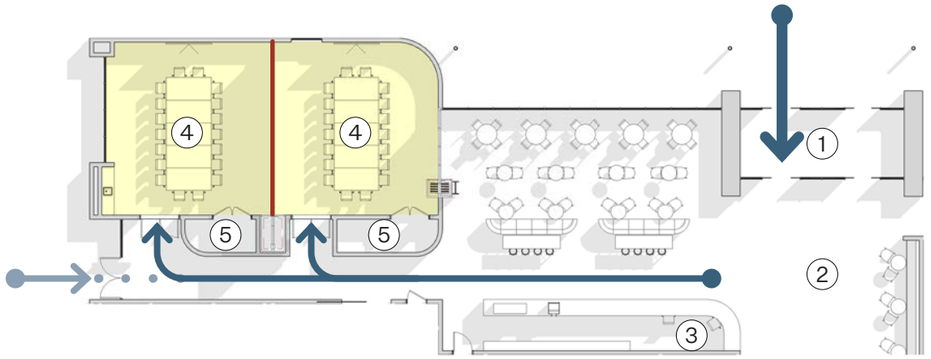
External access is provided to the north, enabling the multifunction spaces to operate independently from the main courts facility when required providing additional flexibility during major tournaments or events, allowing the multifunction spaces to function separately while the courts and associated facilities continue to operate independently if required.

Area allowances:

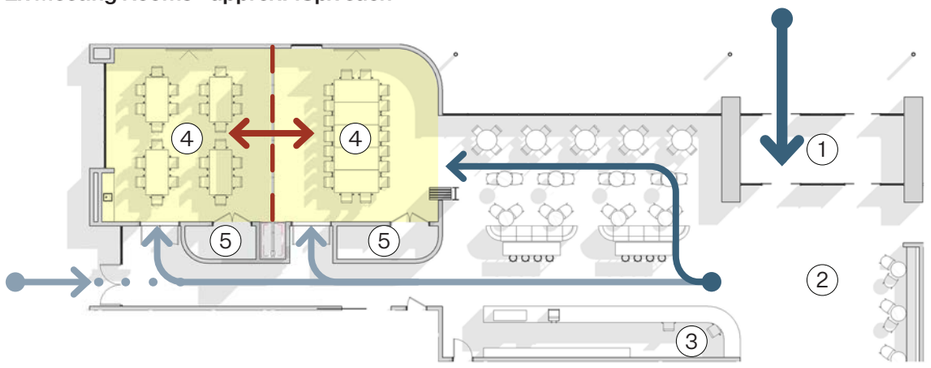
Multifunction Room 1 (Small)	67m²
Multifunction Room 2 (Small)	70m²
Multifunction Room Total (Large)	**137m²**
Storage Room 1	8m²
Storage Room 2	5m²
Kitchenette (within Multifunction Room 1)	2m²
Total:	**152m²**

1. Wind Lobby
2. Reception + Entry Lobby
3. Administration
4. Multifunction Space
5. Storage

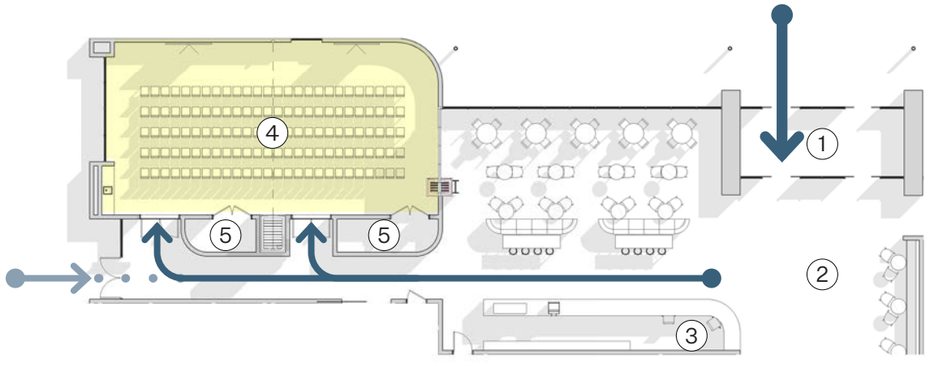
Indicative Layouts



2x Meeting Rooms - approx. 18px each

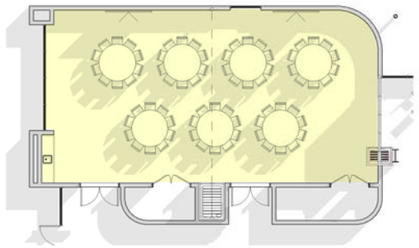


2x Meeting Rooms - approx. 18px each

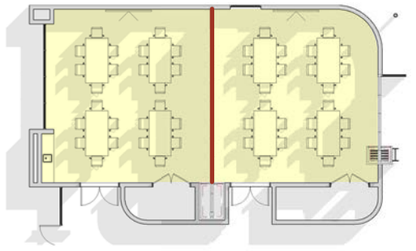


Large Meeting room - approx. 120px

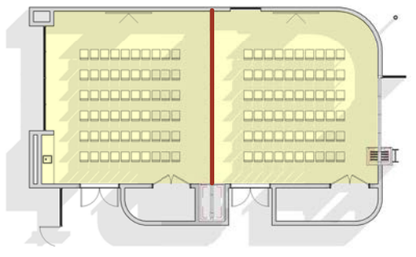
Alternative Arrangements



Banquette - approx. 70px



2x Workshop Rooms - approx. 16px



2x Lecture - approx. 60px each

4.7 Health + Wellness

Proposed Plan

The Health + Wellness spaces are accessed directly from the main entry lobby and maintain a strong visual and operational connection to the reception area, supporting both supervision and access control. This arrangement enables staff to effectively manage the threshold to the gym, without the requirement for additional staff.

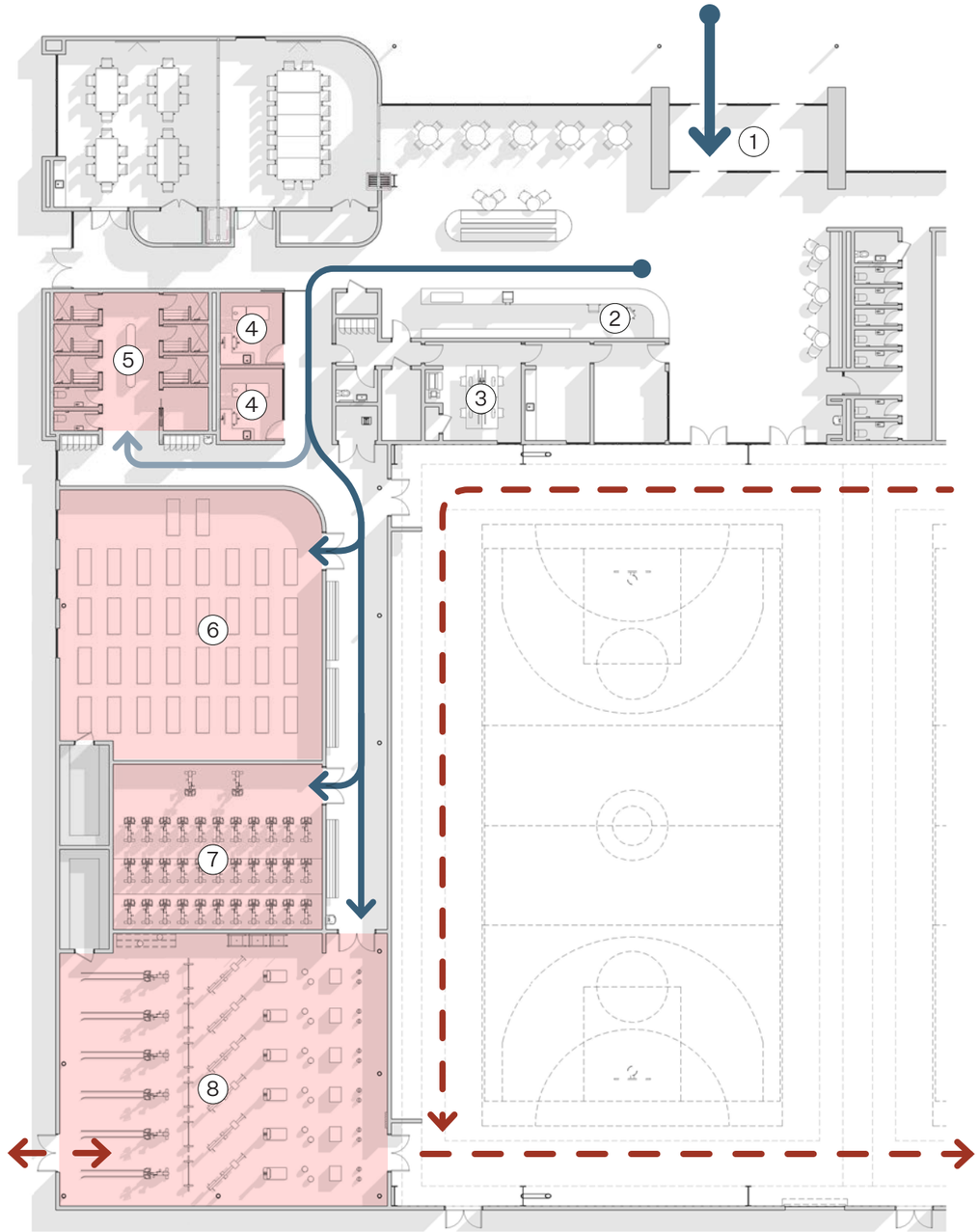
All Health + Wellness functions are located beyond a controlled access threshold, creating a clear separation between public and membership-based activities. This ensures the facility can be securely managed when these spaces are not in use and allows independent operation of the Health + Wellness areas without affecting access to the wider building.

Equipment & storage layout indicative only. Procurement strategy for gym specific equipment to be confirmed in Preliminary Design.

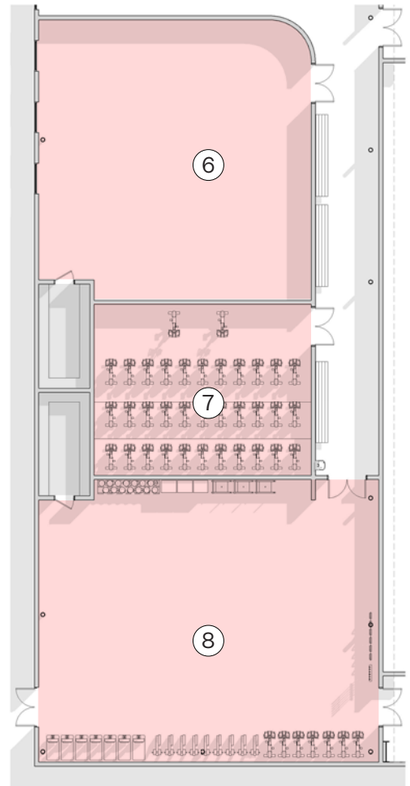
Area allowances:

Wellness Therapy/Physio Room 1	12m²
Wellness Therapy/Physio Room 2	12m²
Change Rooms/Lockers – 1x Accessible Toilet/Shower – 2x Unisex Toilets – 6x Unisex Showers	70m²
Low Intensity Group Fitness (13.3mx13.7m)	179m²
Cycle Studio (10.6mx8.4m)	89m²
High Intensity Group Fitness (16.6mx13.8m)	227m²
Storage Room 1	13m²
Storage Room 2	13m²
Cleaners Cupboard	4m²
Circulation	107m²
Total:	**726m²**

Indicative Layout



Storage Layout



1. Wind Lobby
2. Reception + Entry Lobby
3. Administration
4. Physio/Consult Spaces
5. Change Rooms
6. Low Intensity Studio
7. Cycle Studio
8. High Intensity Studio

4.8 Sports Events

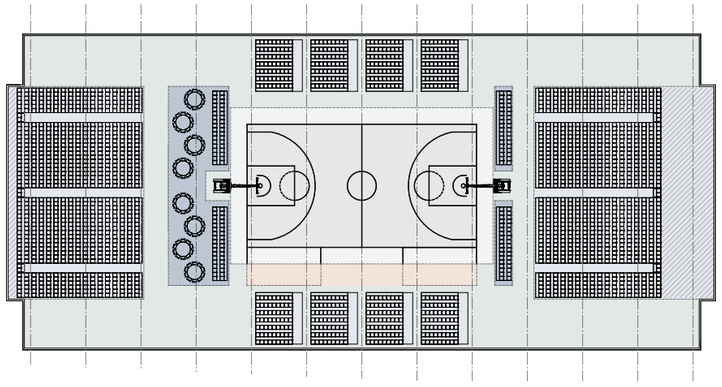
Show Court Mode

The ability for the facility to host sporting events, including a show-court configuration, has been tested through the Concept Design phase.

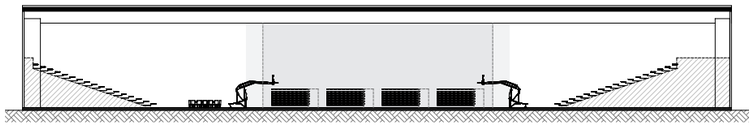
Brief Considerations:

- Spatial allowances have been incorporated within the baseline design for plant infrastructure required to support future event modes
- Storage provisions for retractable seating have been included within the baseline design, although the seating units themselves are excluded from the current project scope
- The fire engineering strategy has been developed based on a maximum occupancy of 2,000 people to support potential future events
- The traffic assessment has been based on a day-to-day operational occupancy of approximately 1,500 people

Centre Court

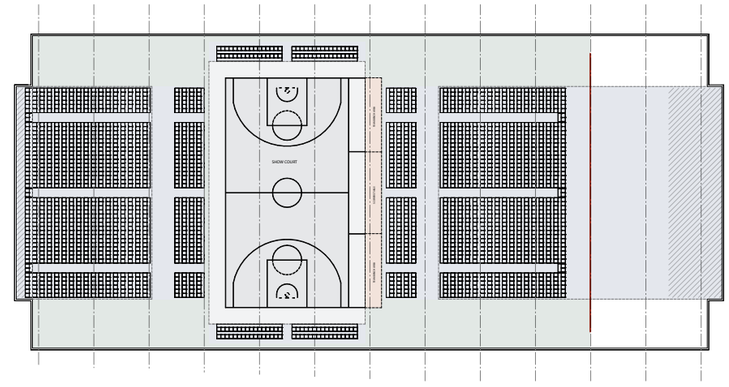


Plan

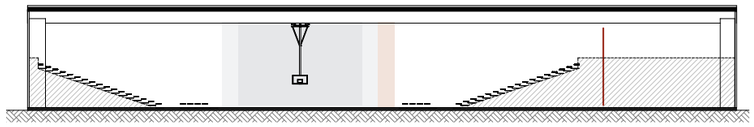


Section

Court 2 Show Court



Plan



Section

Arena-type Show Court Configuration

A centre-court show-court configuration was considered during Concept Design but ultimately discounted due to its impact on day-to-day operations. Such a setup would likely require the entire courts facility to be taken out of community use during event setup and pack-down, significantly reducing operational flexibility and court availability.

Preferred Show Court Configuration

Through testing, including assessment against NBL requirements, Court 2 was identified as the preferred show-court location. This configuration enables smaller events to be accommodated with minimal disruption to day-to-day operations while maintaining community access to the remaining courts.

By concentrating event-specific infrastructure and technical upgrades within a single court zone, it reduces cost, complexity, and setup requirements, providing the most efficient balance between event capability and ongoing facility use minimises disruption during event setup and pack-down and provides the best balance between event capability and day-to-day facility use.

- Basketball Court
- Court Overrun
- Fixed Retractable Seating
- Movable Retractable Seating
- Circulation
- Teams Benches/Scorers Zone
- Court Dividers

4.8 Sports Events

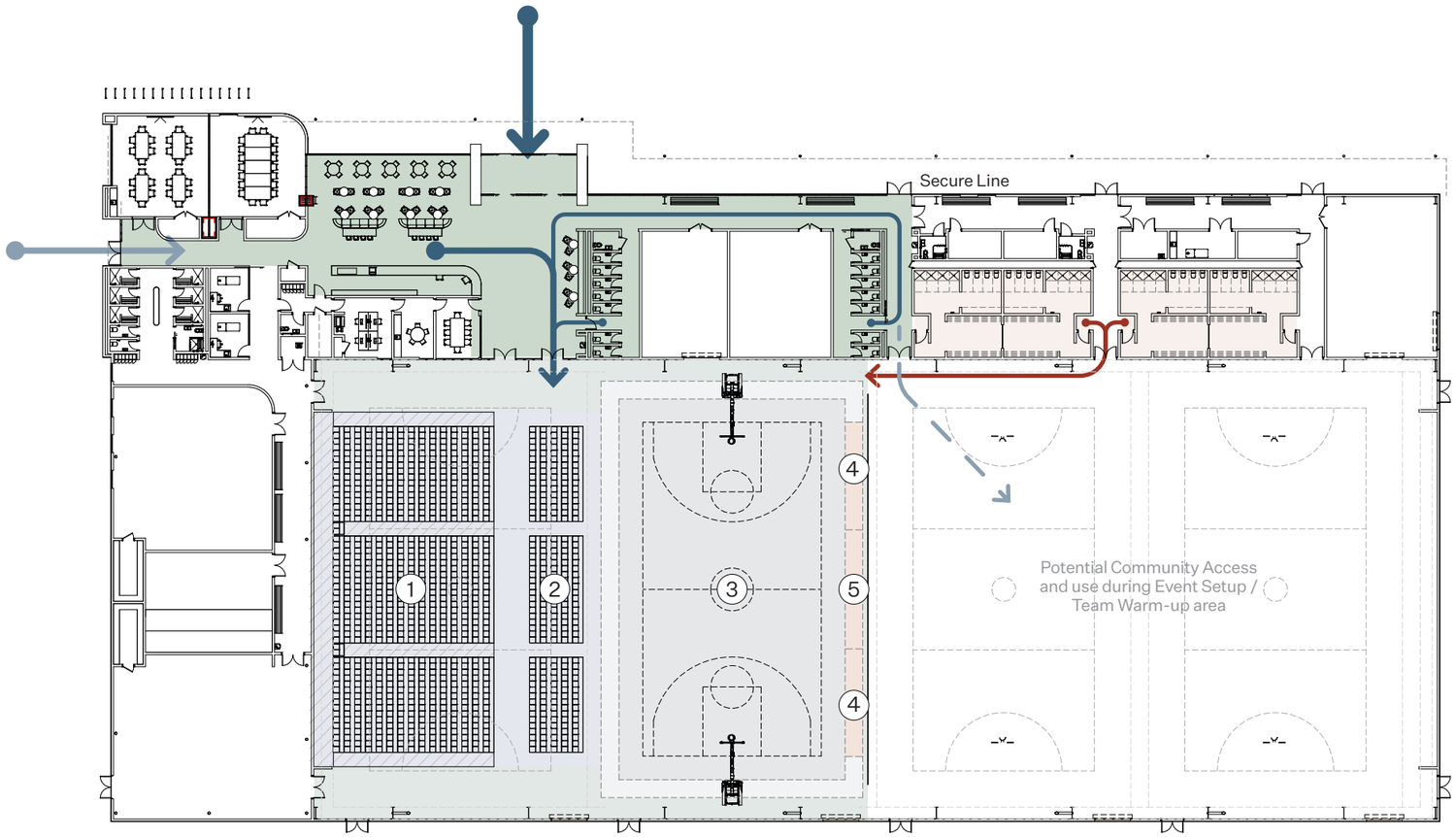
Show Court - 1,000px Show Court

A 1,000-person show-court event can be accommodated using Courts 1 and 2 only, allowing the remainder of the facility to remain operational and accessible to the community during event setup and pack-down.

Public access is via the main entry lobby, with controlled access to spectator amenities and secure separation from team areas. Teams access the changing facilities via a dedicated secondary entry, avoiding crossover with public circulation.

Spectator seating is provided through a combination of retractable grandstand seating and floor seating.

Ground Floor Plan



1	Fixed Retractables	750
2	Floor Seating	300
	Total Seats:	**+/-1,000**
3	Show Court	
4	Team Benches Area	
5	Scorers Table	
	Public Circulation	
	Teams/Back of House Circulation	
	Basketball Court	
	Court Overrun	
	Fixed Retractable Seating	
	Movable Retractable Seating	
	Circulation	
	Teams Benches/Scorers Zone	
	Court Dividers	

4.8 Sports Events

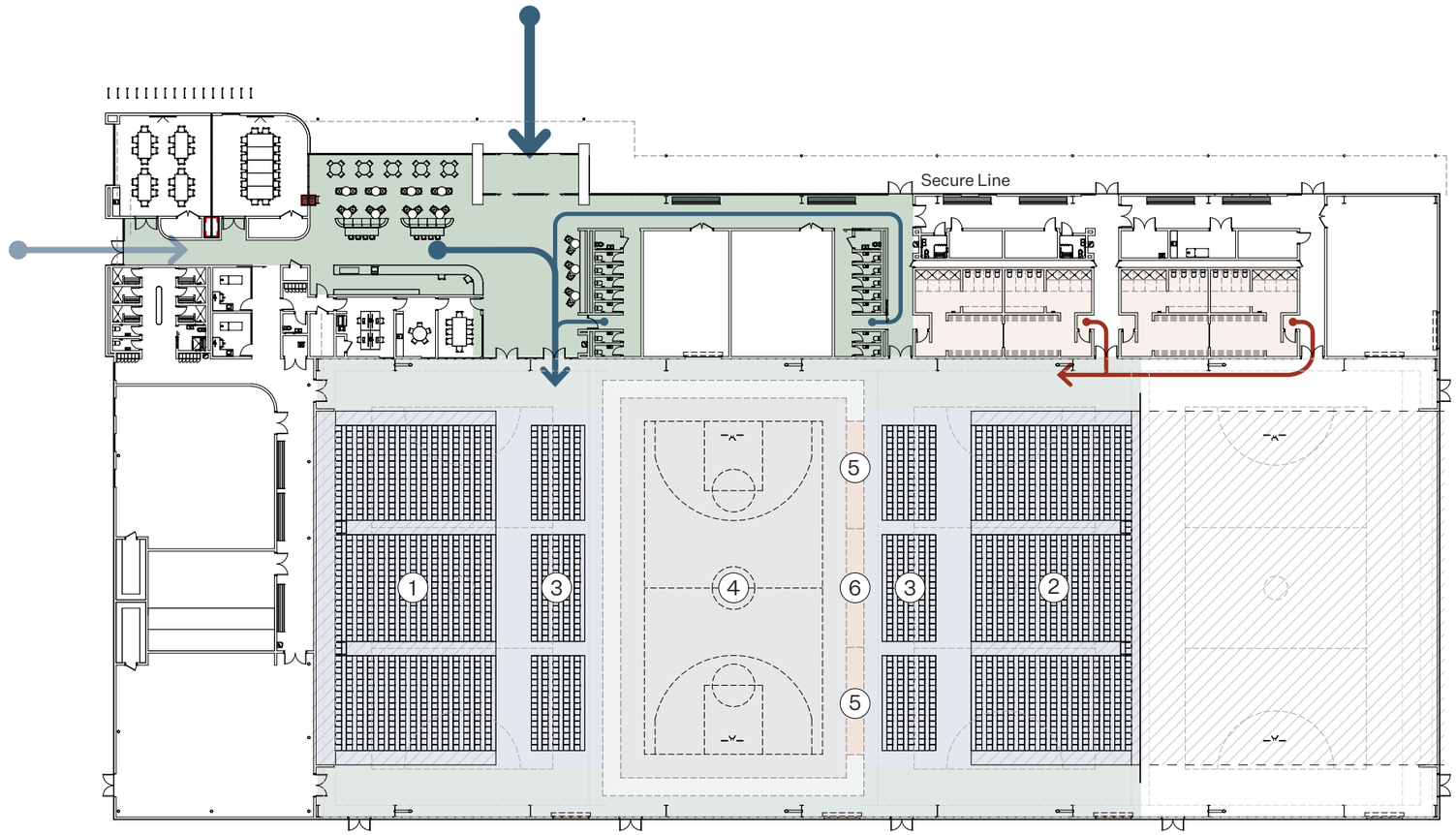
Show Court - 2,000px Show Court

A 2,000-person show-court event can be accommodated within the facility; however, it requires the full courts hall, reducing community access and court availability during event setup and pack-down.

Public access is via the main entry lobby, with controlled access to spectator amenities and clear separation from team areas. A secondary public entry via the eastern façade can be utilised to support crowd management and ticketing when required. Teams access the changing facilities through a dedicated secondary entry, avoiding crossover with public circulation.

Spectator seating is provided through a combination of two retractable grandstand seating banks and floor seating.

Ground Floor Plan



1	Fixed Retractables	750
2	Moveable Fixed Retractables	750
3	Floor Seating (Total)	500
	Total Seats:	**+/-2,000**

4	Show Court
5	Team Benches Area
6	Scorers Table

- Public Circulation
- Teams/Back of House Circulation
- Basketball Court
- Court Overrun
- Fixed Retractable Seating
- Movable Retractable Seating
- Circulation
- Teams Benches/Scorers Zone
- Court Dividers

Show Court - 2,000px Show Court NBL Setup

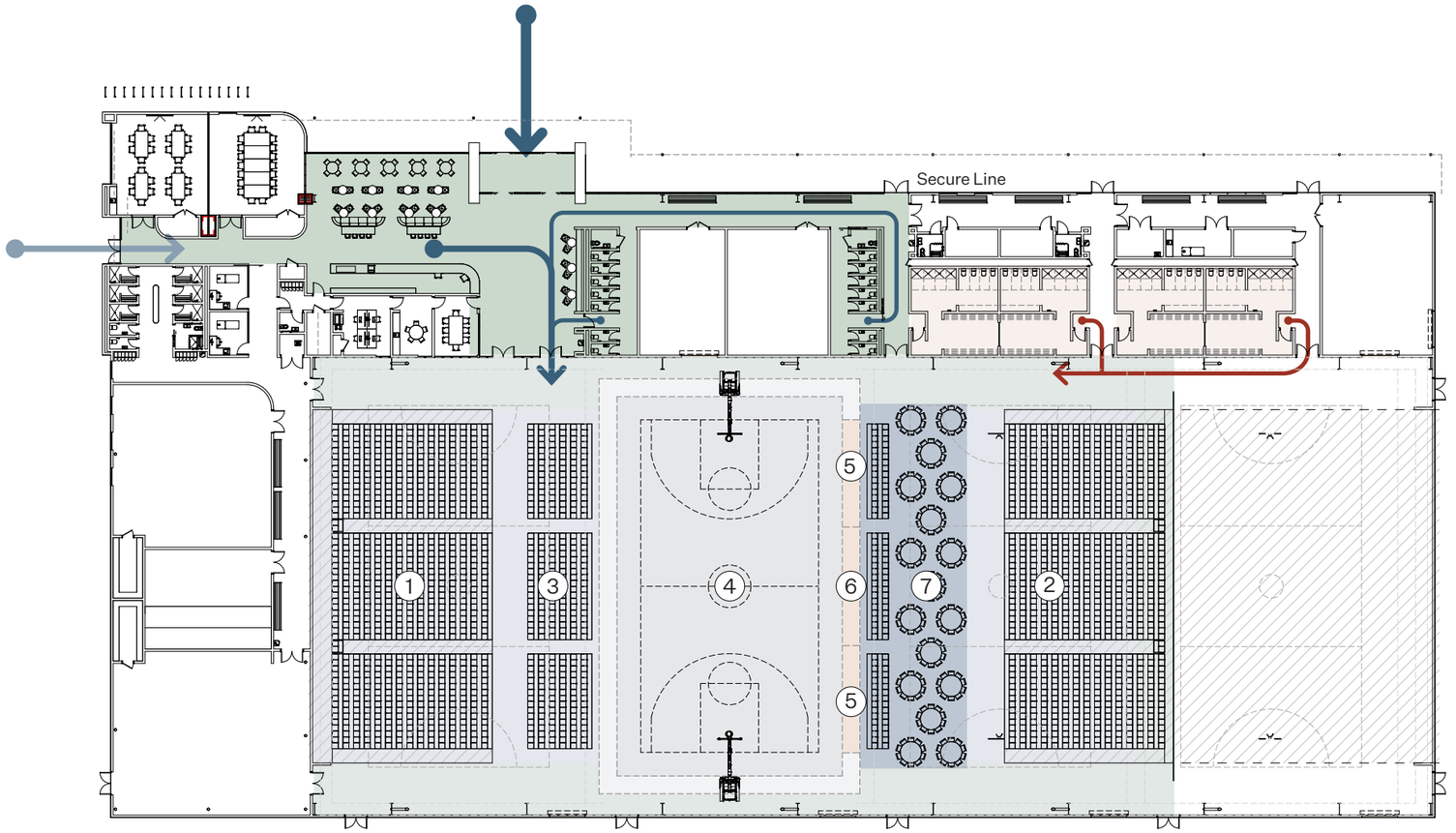
A 2,000-person NBL show-court event can be accommodated within the facility; however, it requires use of the full courts hall, reducing community access and court availability during event setup and pack-down.

Public access is via the main entry lobby, with controlled access to spectator amenities and clear separation from team areas. A secondary public entry via the eastern façade can be utilised to support crowd management and ticketing where required. Teams access the changing facilities through a dedicated secondary entry, avoiding crossover with public circulation.

Due to the use of floor-mounted basketball hoops, spectator circulation between both sides of the show-court is restricted. However, internal circulation routes provide access to both sides of the venue, with dedicated toilet facilities serving each side of the court.

Spectator seating is provided through a combination of two retractable grandstand seating banks and floor seating.

Ground Floor Plan



1	Fixed Retractables	750
2	Moveable Fixed Retractables	750
3	Floor Seating (Total)	500
	Total Seats:	**+/-2,000**

4	Show Court
5	Team Benches Area
6	Scorers Table
7	VIP Area

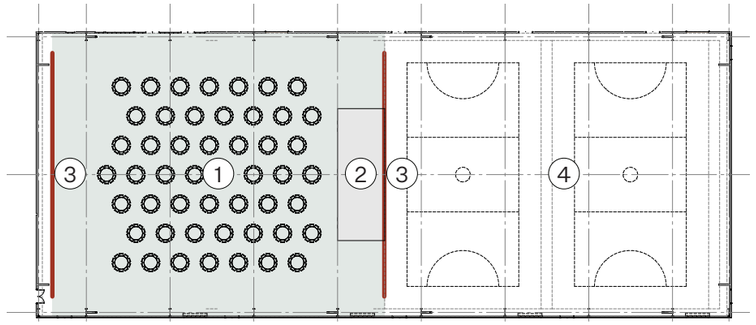
- Public Circulation
- Teams/Back of House Circulation
- Basketball Court
- Court Overrun
- Fixed Retractable Seating
- Movable Retractable Seating
- Circulation
- Teams Benches/Scorers Zone
- Court Dividers

4.8 Events

Event Overlays

The additional event overlays below were identified within the Operational Brief and are subject to the additional technical uplift required to support events beyond the baseline project. The configurations shown therefore illustrate the facility's potential future capability only.

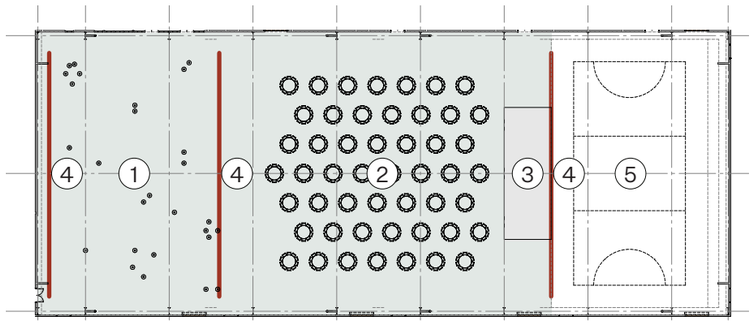
Banquette - 500px



In banquette mode, the courts can comfortably accommodate an event of up to 500 guests, including a stage and presentation area. The entry lobby would function as a pre-function and registration space, supporting guest arrival and gathering prior to the event. The southern storage/swing space could be utilised as a catering kitchen and plating area, assuming food preparation is undertaken off-site, providing an efficient back-of-house servicing zone separate from the main event floor.

1. Seated Event
2. Stage
3. Full Height Court Divider / Drape
4. Back-of-House

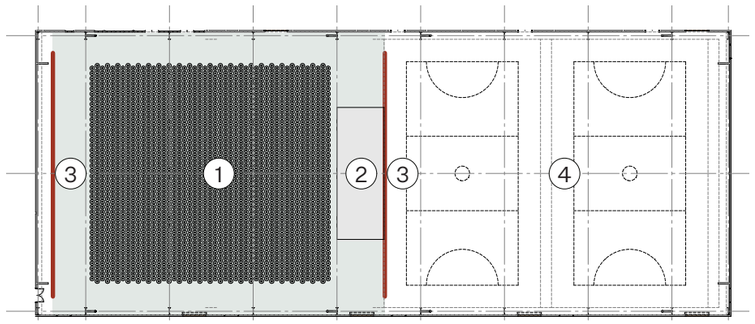
Conference - 500px



Similar to the banquette configuration, the four-court hall can comfortably accommodate a conference event of up to 500 attendees, including a dedicated trade exhibition area. Secondary structure to support court dividers off grid can be utilised to support acoustic drapes to form clear divisions of space within the courts area. The southern storage/swing space could be utilised as a catering kitchen and plating area, assuming food preparation is undertaken off-site, providing an efficient back-of-house servicing zone separate from the main event floor.

1. Pre-function / Trade
2. Conference Space
3. Stage
4. Full Height Court Divider / Drape
5. Back-of-House

Standing Event - 2,000px



A stand-up event for up to 2,000 attendees could be accommodated within the four-court facility. The configuration shown illustrates a concentrated event footprint; however, the full court area could also be utilised to provide a more dispersed arrangement or accommodate additional event functions. The entry lobby and surrounding circulation space provides opportunities for managed access and crowd control. For events of this scale, additional toilets would need to be bumped in and specific traffic management plans to facilitate additional vehicle movements.

1. Event Space
2. Stage
3. Full Height Court Divider / Drape
4. Back-of-House

4.9 Materiality

Interior approach

A material palette inspired by place and designed for resilience. Warm, authentic finishes create a welcoming experience, while durable and adaptable materials ensure lasting performance and enduring value.

Resilience

Resilience is embedded through material choices that support adaptability, durability, and ease of maintenance. Finishes are selected for their ability to perform in demanding environments while accommodating changing operational needs.

Scratch-resistant surfaces, resilient flooring systems, stain-resistant textiles, and easily maintainable finishes contribute to a practical and future-ready interior. The material strategy balances aesthetics with performance, ensuring the space remains functional and adaptable over time.

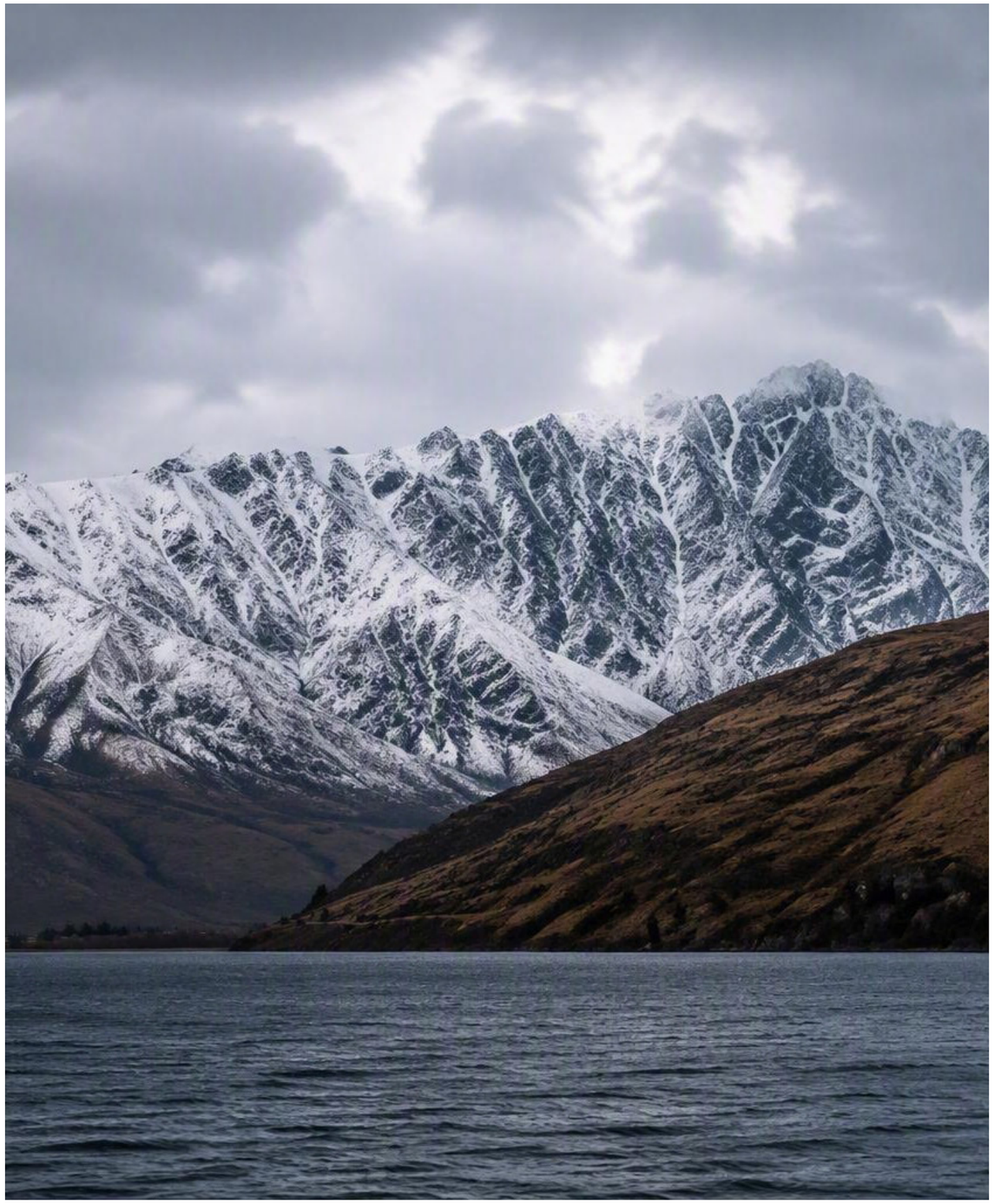
Endurance

Endurance focuses on selecting materials that maintain their appearance and functionality over time. A restrained palette ensures the design remains relevant beyond short-term trends, reducing the need for future refurbishment.

Quality finishes, robust detailing, and durable surface materials are chosen to withstand daily use. This approach promotes long-term value, sustainability, and a consistently refined user experience throughout the life of the space.

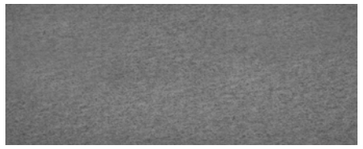
Natural warmth

Natural warmth is achieved through the use of cost effective materials that create a sense of comfort, connection, and well-being. Small areas of timber composite finishes, textured fabrics, and earthy colour palettes introduce depth and character while fostering a human-centred environment.













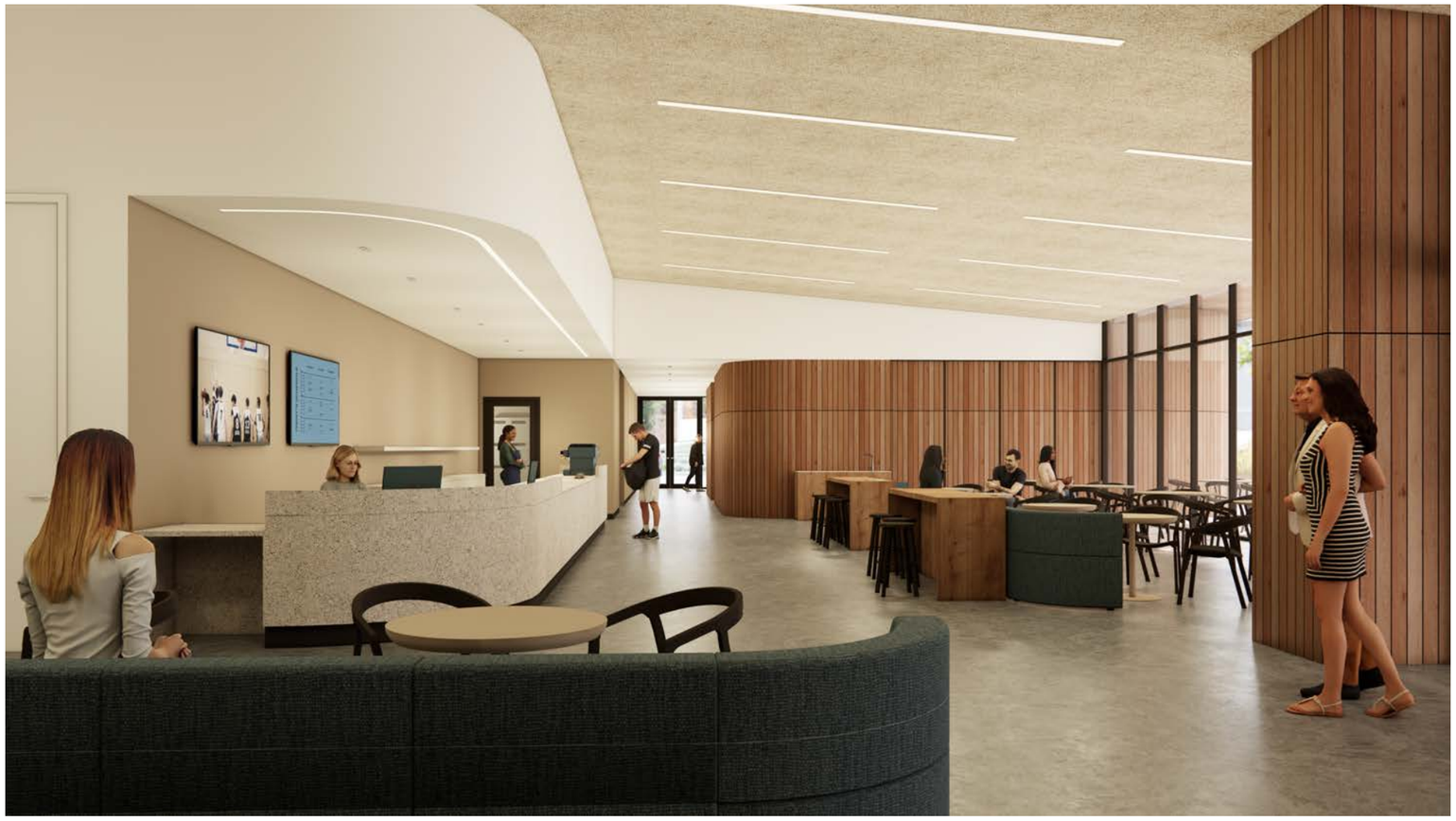




4.9 Materiality

Interior Concept - Arrival Lobby

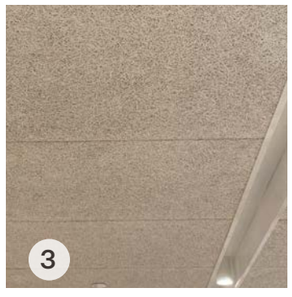
Resilient and durable materials create a warm and welcoming arrival experience, with exterior cladding extending seamlessly into the interior space. Polished concrete flooring and robust joinery finishes provide a low-maintenance solution suited to multi-purpose use and high-traffic environments.



1. Polished Concrete Flooring
2. Innowood or Similar
3. Wood wool ceiling panels, Hera Design or similar
4. Duralloy powdercoating to skirting and glazing suites
5. HPL Stone Look
6. High pressure laminate joinery
7. Textured heavy commercial crypton fabric











JASMAX

Queenstown Events Centre
Concept Design Report

October 2026

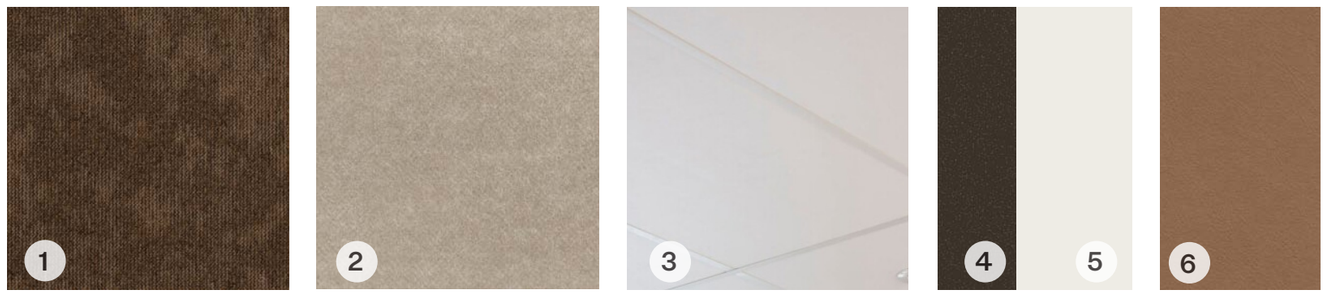
4.9 Materiality

Interior Concept - Multi-Function Spaces

Heavy commercial-grade carpet tiles, wall treatments, and acoustic ceilings provide warmth while delivering high levels of acoustic performance. Durable furniture finishes ensure longevity and withstand the demands of multiple user groups and events.



1. Heavy commercial carpet tile
2. Acoustic wall panelling
3. 1200x600 acoustic tile in grid
4. Duratec powdercoating to skirting and glazing suites
5. Low pressure laminate tops, steel legs
6. Commercial grade fabric



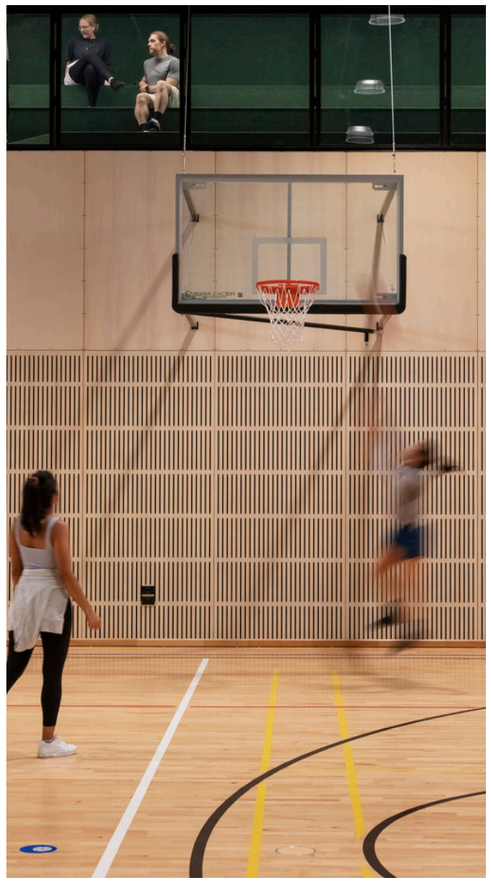


4.9 Materiality

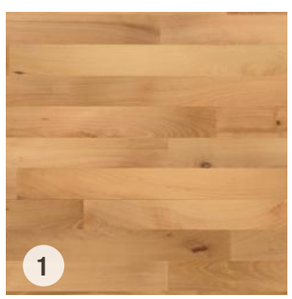
Interior Concept - Courts

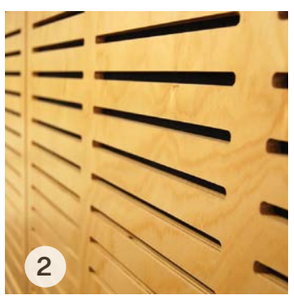
A functional, durable finish provides a neutral backdrop to the main courts. Resilient low-level finishes are designed to withstand high-impact use, while acoustic wall panels and ceiling tiles provide effective sound attenuation throughout the large space.

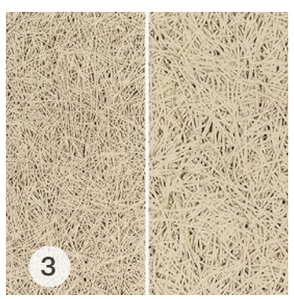




1. Juncker sports flooring
2. Plywood panels - slotted where acoustic requirements
3. Wood wool ceiling tile
4. Acoustic panel 50mm with Vertiface finish
5. Paint Finish





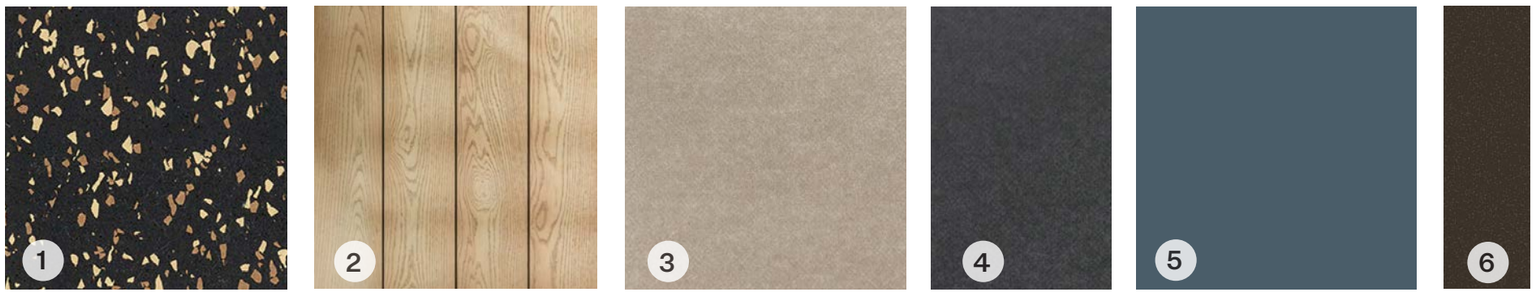




Health + Wellness

All finishes are easy to clean, durable, and maintainable, while providing appropriate slip resistance. Colour selections for each area are tailored to the intensity of use and the functional requirements of the space.

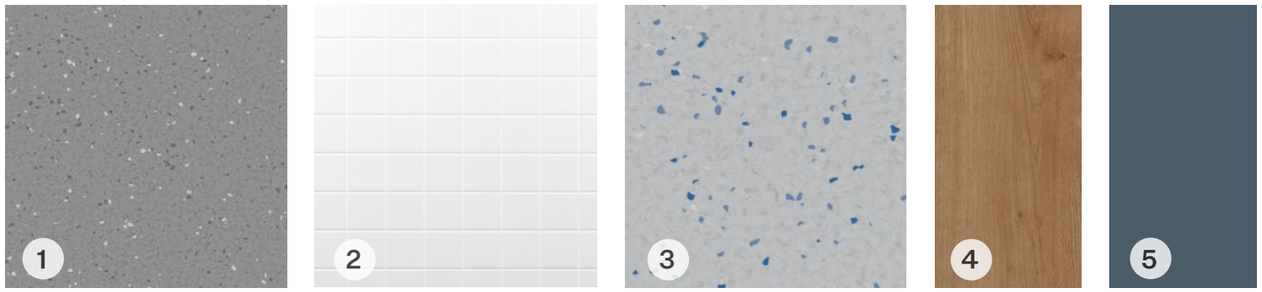
1. Regupol 8mm rubber flooring
2. Timber sprung floor, single batten - beech
3. Autex acoustic panel or similar to ceiling
4. Autex Cube or similar to selected walls
5. Feature paint
6. Feature paint to ceiling



Bathrooms & Change Rooms

Resilient flooring and wall linings throughout the public bathrooms and changing rooms provide a clean, safe, and durable environment. A palette of block colours, neutral vinyl flooring, and timber look compact laminate partitions adds warmth while supporting robust functionality and ease of maintenance.

1. Antislip vinyl sheet flooring
2. Seratone wall lining
3. Vinyl sheet flooring
4. Compact laminate
5. Feature paint





4.9 Materiality

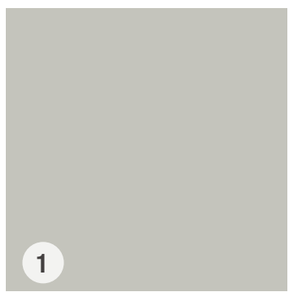
Building Envelope

The external material palette has been carefully selected to meet the briefs requirement for an “appropriate quality” architectural response. To achieve this, the design adopts a restrained and cohesive approach to materiality, limiting the number of external finishes and utilising primarily Colorsteel or a similar standing seam metal cladding system. This approach provides a durable, low-maintenance, and visually consistent building envelope that is well suited to its context. Final colour selections are yet to be confirmed; but will need to be assessed against QAC requirements for anti-glare.

Innowood, or a similar composite timber-look cladding product, is proposed as a feature material to the main entry. Its use is focused on the key entry areas to the building and provides a welcoming character that supports intuitive wayfinding by clearly identifying key building entrances for visitors and occupants.



1. Colour Steel Stone Peak Matte or similar colour
2. Standing Seam Colour Steel Cladding or similar
3. Innowood or Similar



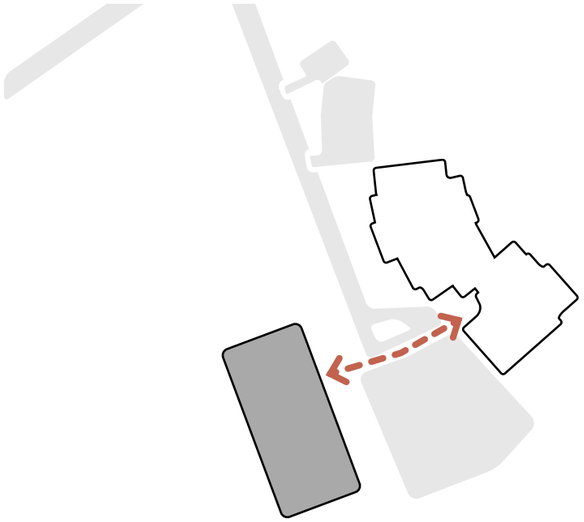




5. Landscape Proposal

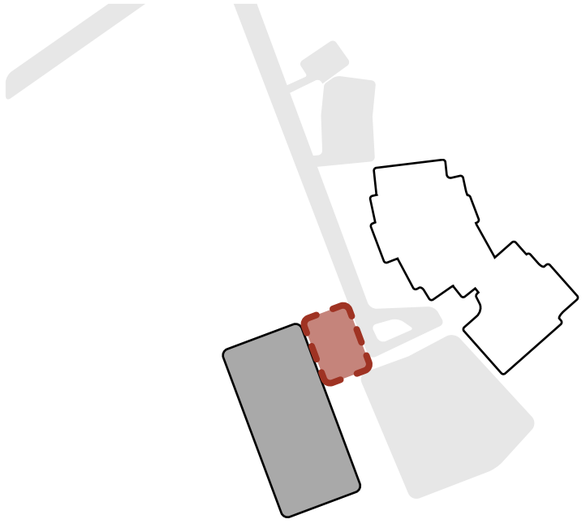
5.1 Landscape Design Response

Key Planning Moves



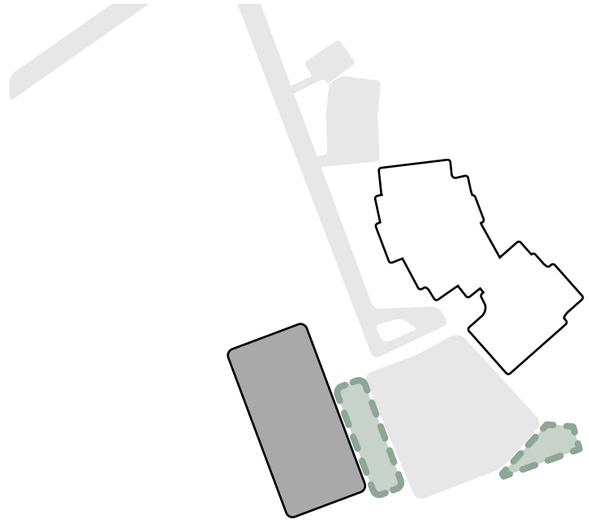
Pedestrian Connection

A safe, accessible crossing that links facilities together for pedestrian movement.



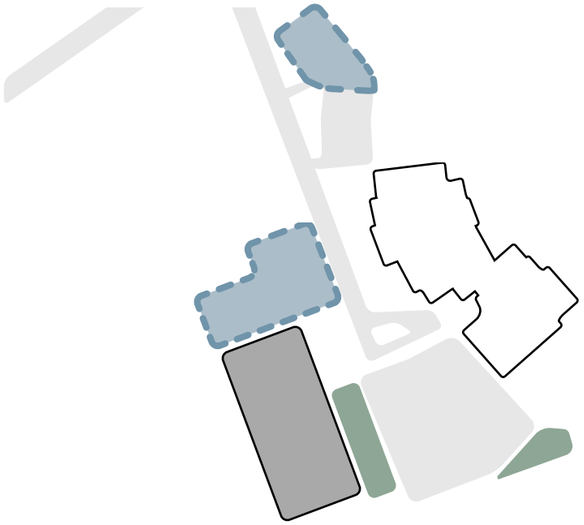
Entry Plaza

A welcoming arrival space that invites visitors to rest and provides a convenient pick-up point.



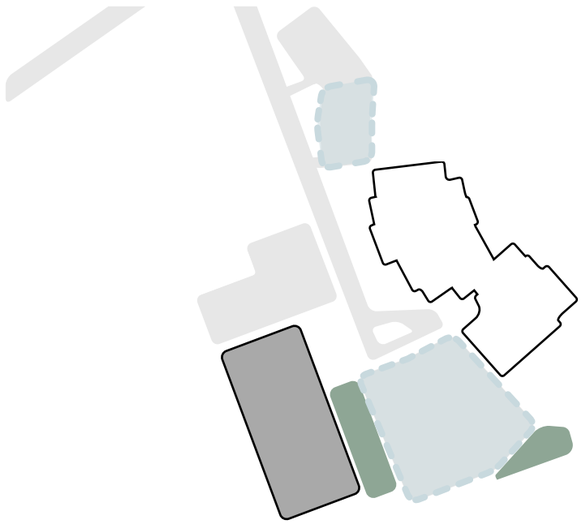
Storm water Management

Surface drainage combined with attenuation and slow release supports biodiversity.



New Carparking

New parking meets demand, working alongside the existing carpark in a legible, efficient layout.



Retained Carparking

The existing parking is restructured to complement the new carparking, maximising efficiency and cost effectiveness.



Edge Planting

Edge planting provides amenity while buffering and screening the site.



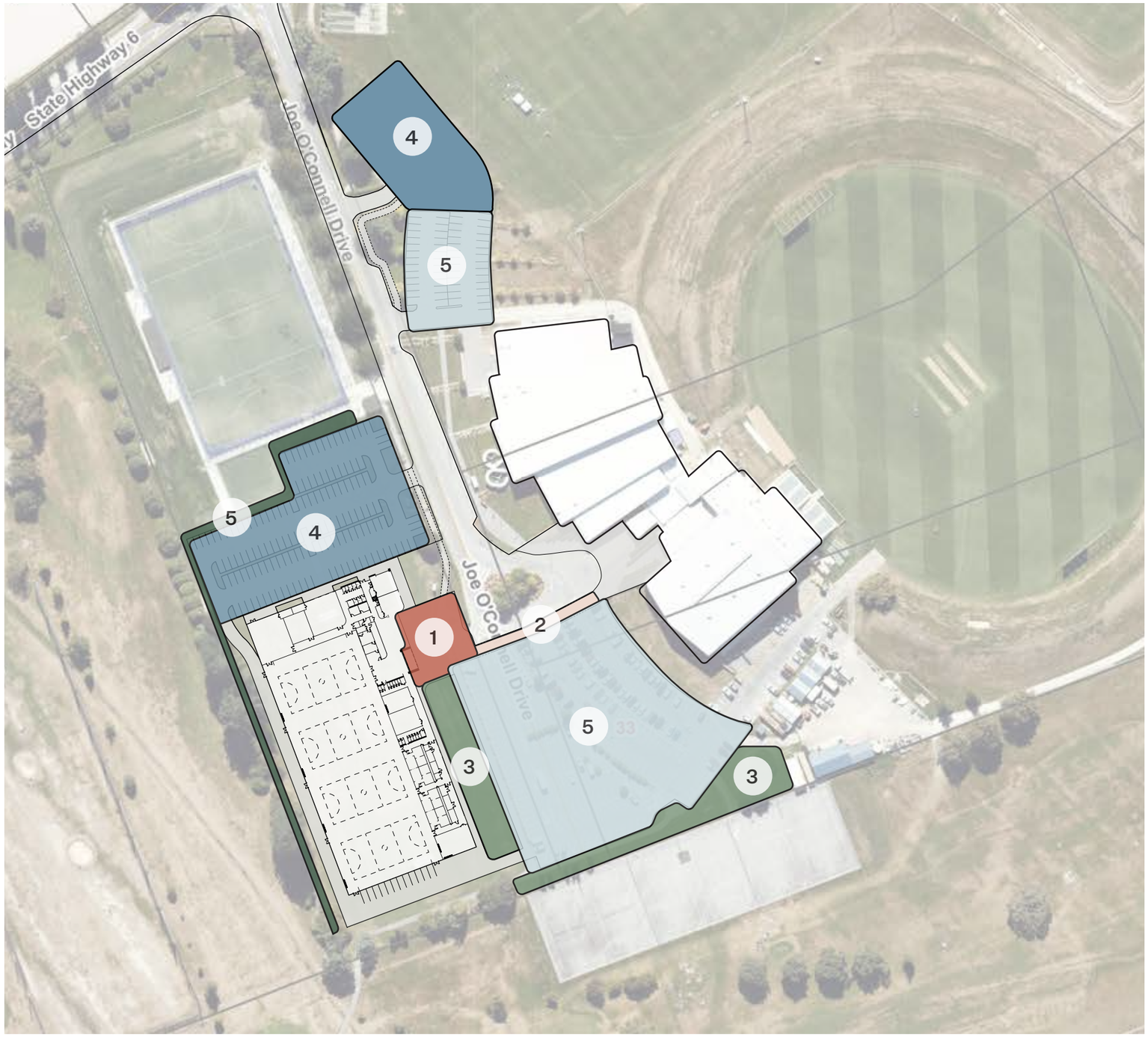
5.2 Landscape Zone Plan

The primary focus of the landscape proposal is to strengthen the connection between the existing building and the proposed new building, creating a cohesive and legible campus environment. A suitably sized entry plaza is proposed at the main entrance to the new building, providing a welcoming arrival space and informal gathering area for staff, visitors, and occupants. The plaza forms the key transition point into the building and is connected to the existing building via an enhanced pedestrian link, distinguished through changes in paving material and surface treatment to clearly prioritise pedestrian movement and improve site wayfinding and safety.

The landscape design also incorporates a storm water swale located between the proposed building and the existing car parking area. The swale is intended to manage and treat the majority of storm water runoff generated from the new building and surrounding hard stand areas, including portions of the existing car park. The swale will be planted with appropriate low-maintenance species that are tolerant of both wet and dry conditions, contributing to storm water treatment outcomes while enhancing the visual quality of the site.

In addition to its storm water function, the planted swale will provide a landscaped buffer between the building and vehicle parking areas. This will help soften the appearance of the car park, improve the amenity of views from within the building, and contribute to a greener and more attractive setting for the development. Together, the entry plaza, pedestrian connections, and planted swale create a functional and integrated landscape response within the existing precinct.

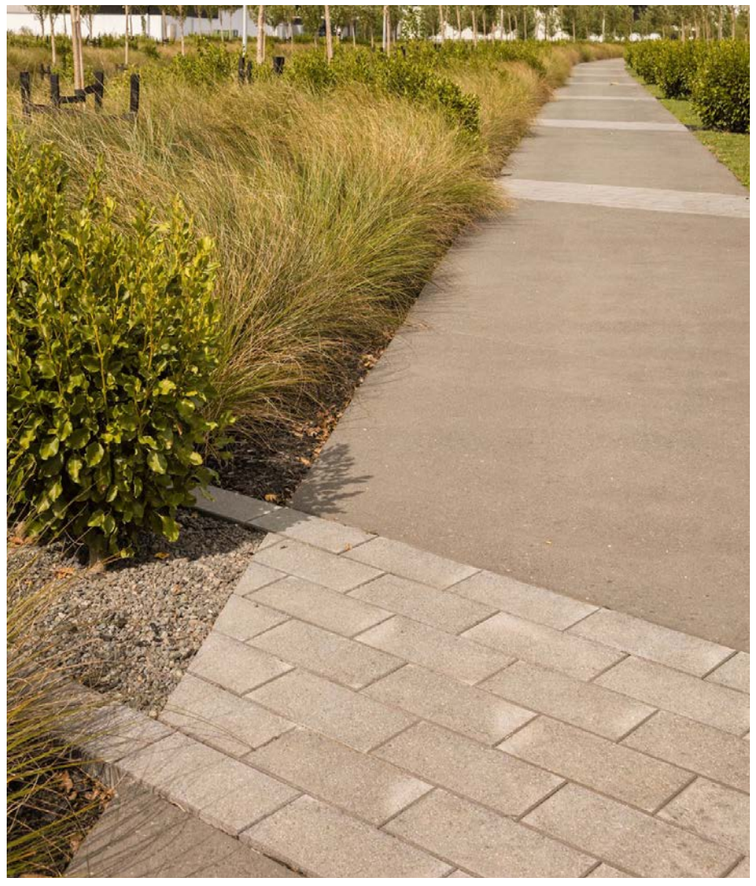
Site Plan



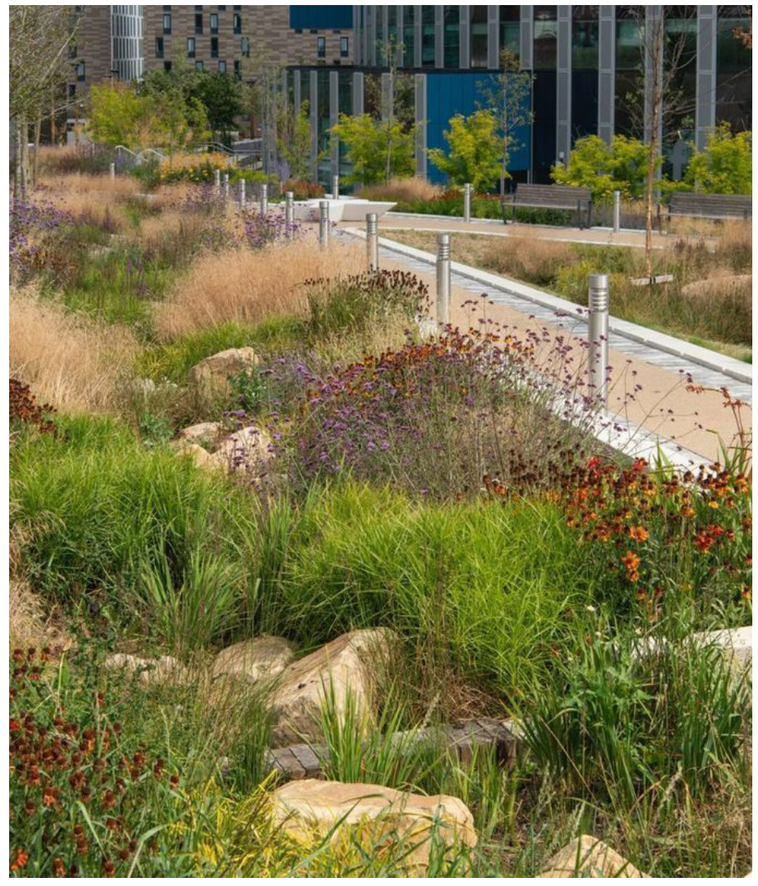
1. Entrance Plaza
2. Pedestrian Connection
3. Storm water Management
4. New Parking
5. Retained Carparking
6. Edge Planting

5.3 Landscape Precedents

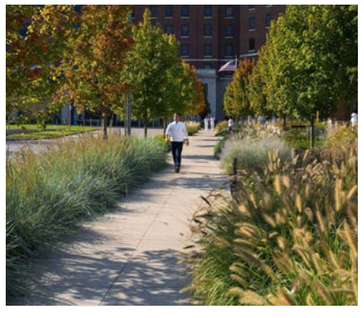
Project Examples











1 Pedestrian movement

An enhanced pedestrian link between the existing and new buildings, distinguished through a change in paving material to prioritise pedestrian movement.

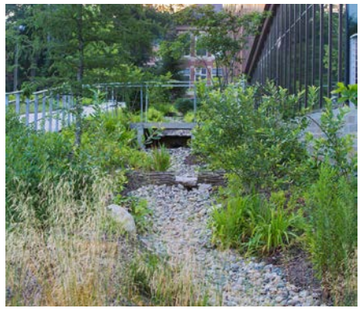




2 Entry Plaza

An appropriately sized plaza to form a welcoming entry and gathering point to the new building.





3 Storm water Management

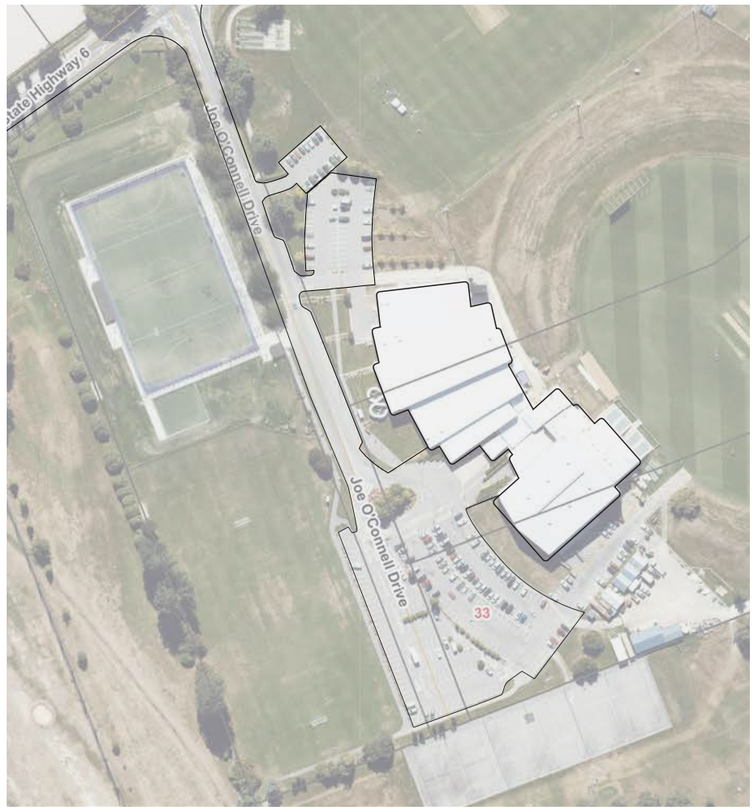
Storm water management through planted swales providing landscape buffers within the site.

Refer to 5.2 Landscape Zone Plan to reference location

5.4 Carparking

Staged Development

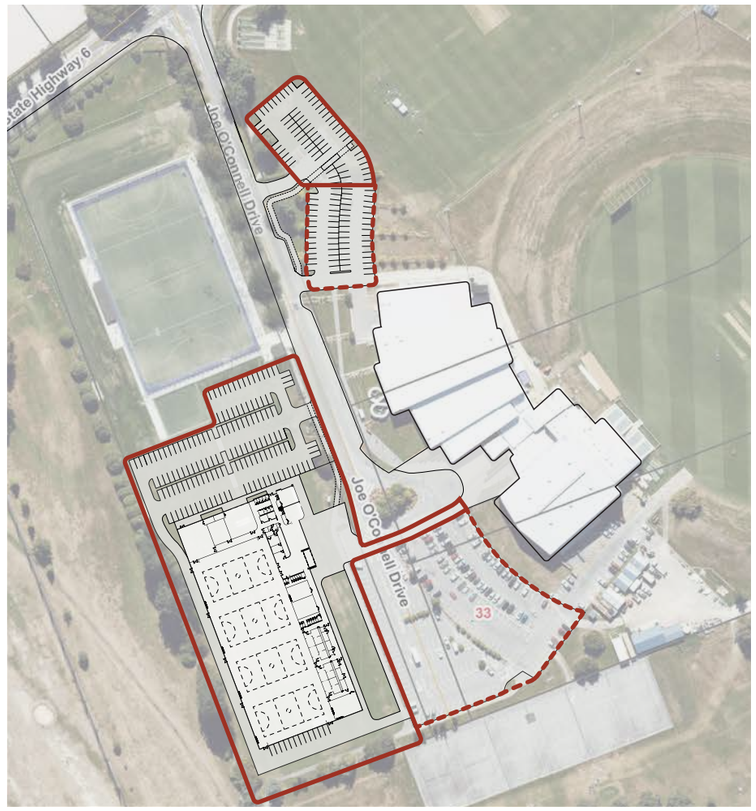
Existing Carparking



The existing car parking comprises two primary areas. The southern car park has evolved through successive expansions of the facility and is currently formed by two interconnected parking areas. To the north, the cricket nets car park is arranged as two smaller parking areas and also accommodates nine designated freedom camping spaces.

Current carparking on site: **+/-320 spaces**

Proposed Carparking

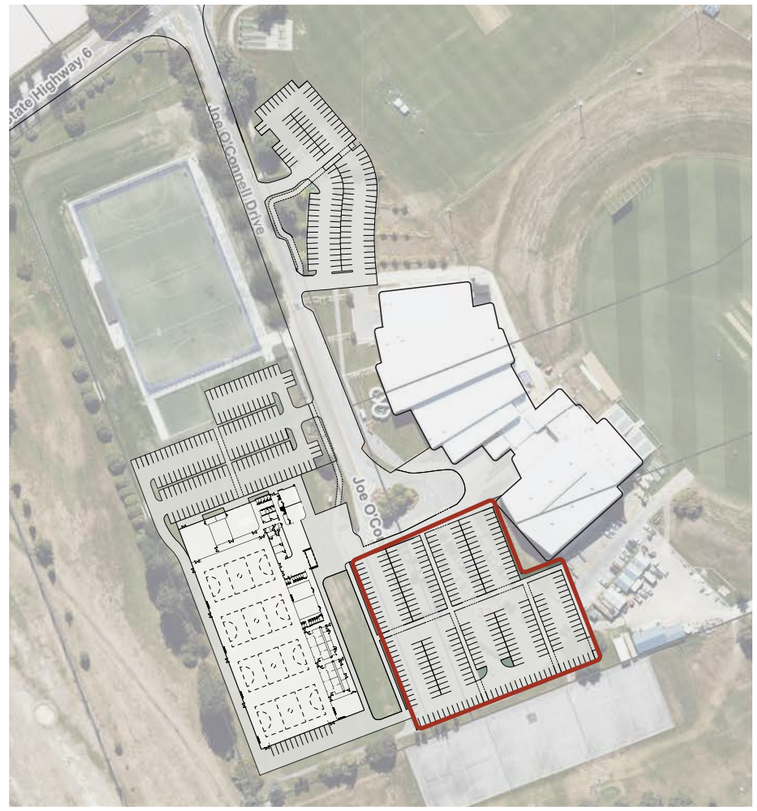


The proposed parking strategy includes a new car park at the northern end of the facility, providing approximately 135 additional spaces. The existing northern cricket nets car park is also proposed to be expanded, increasing capacity to approximately 130 spaces and enhancing overall parking provision across the site.

Initial traffic assessments have determined that an additional +/-160 carparks are required on site to meet additional demand created by the day-to-day operation of the precinct.

Total carparking proposed: **+/-480 spaces**

Future Scope



The proposed parking strategy and site planning have been developed with consideration for a future stage that would consolidate the existing southern car parking areas. This provides an opportunity to improve wayfinding, simplify vehicle movements, and increase overall parking efficiency and capacity across the site.

Total carparking to be confirmed at later stage

6. Sub-consultant Summary

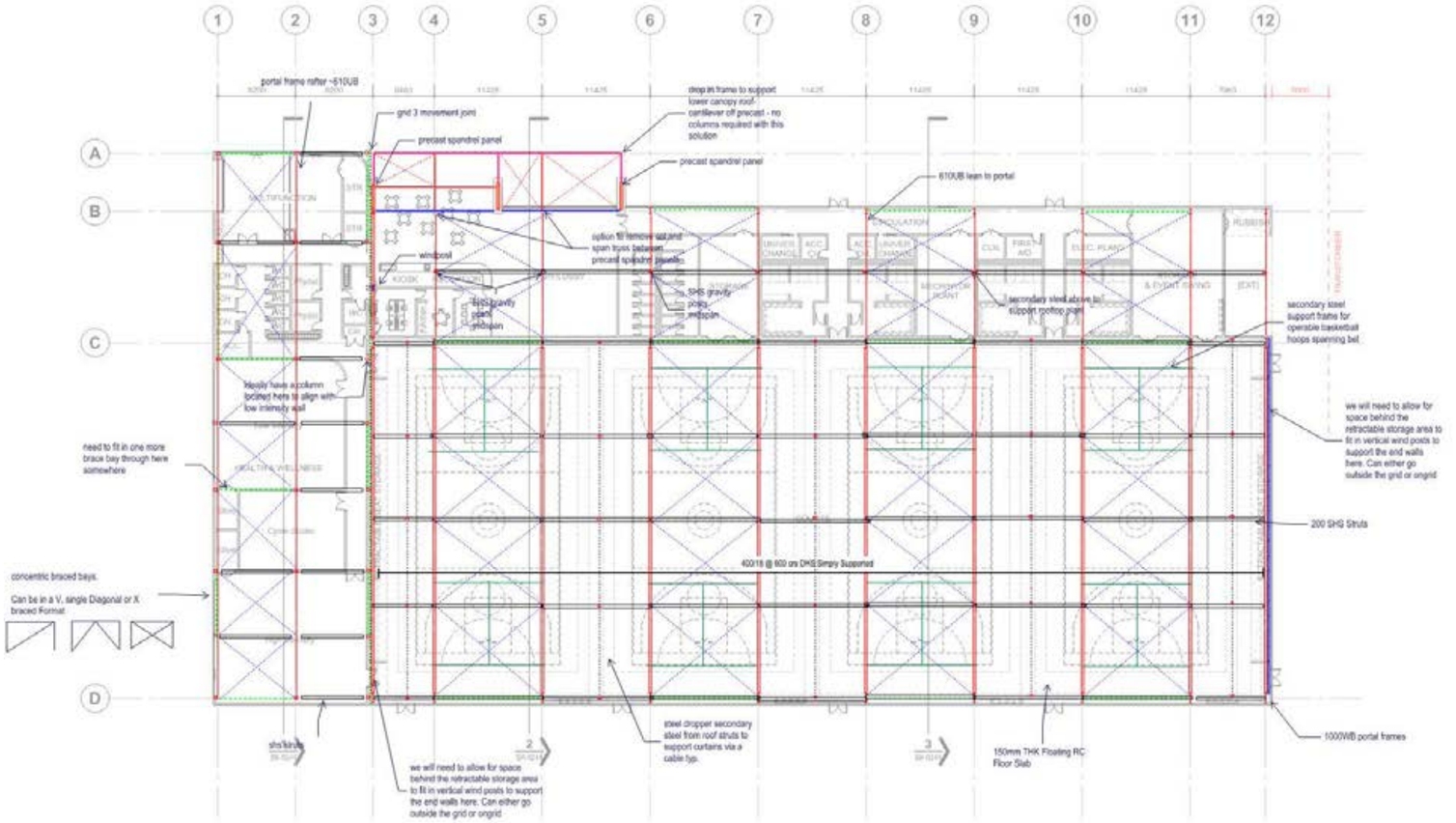
6.1 Structure

The preferred structural solution to be carried forward to preliminary design is **A Welded Steel Beam Gable Portal Frame with a Single Storey Lean to Structure at a grid spacing of 11.4m**. This solution was adopted as it provides an efficient structure, which minimises the fabrication of structural steel and works well with the court arrangements. Welded steel beams have reduced fabrication requirements than a welded steel truss, and can be economically procured from both in NZ and offshore. A wide grid span means reduced foundation works, and a single storey lean to is easy to construct.

The key aspects of the preferred solution are described below:

- 1000WB portal frames are provided through the court area. 200SHS struts with RB25 reidbraces form the roof bracing system. Wind posts are required to each gable end to restrain the cladding for external wind pressures as well as support the retractable seating in its closed position.
- The lean to structure consist of a post and beam arrangement of 610UB rafters with 150SHS posts. This structure is braced with steel bracing members to provide lateral resistance.
- Due to the length of the building and the change in structural system for the health and wellness space a seismic joint has been introduced on grid 3. This allows for differential movement between the health and wellness space and the main hall area. This joint is supported by separate columns either side of grid 3 and allows for movement in both horizontal directions
- Options have been investigated for the lateral bracing. At this point in time tension and compression steel bracing is considered as the preferred option. This provides a rigid, elastic bracing solution which is easy to construct and can be orientated to coordinate with the architecture. Should a higher degree of seismic performance above building code levels be desired by the client consideration of Buckling Restrained Braces, or Braces with Dampers could be considered. This would add some complexity to the structural solution, add additional lead times for materials and would be considered a an alternative solution requiring peer review. The solution provided with rigid tension / compression bracing meets the building code requirements and provides suitable robustness for a IL3 building.
- The entrance canopy is supported by a series of steel posts spanning from the lean to structure.

For a full overview of the preferred option to carry to preliminary design refer to the Appendix.



6.2 Civils

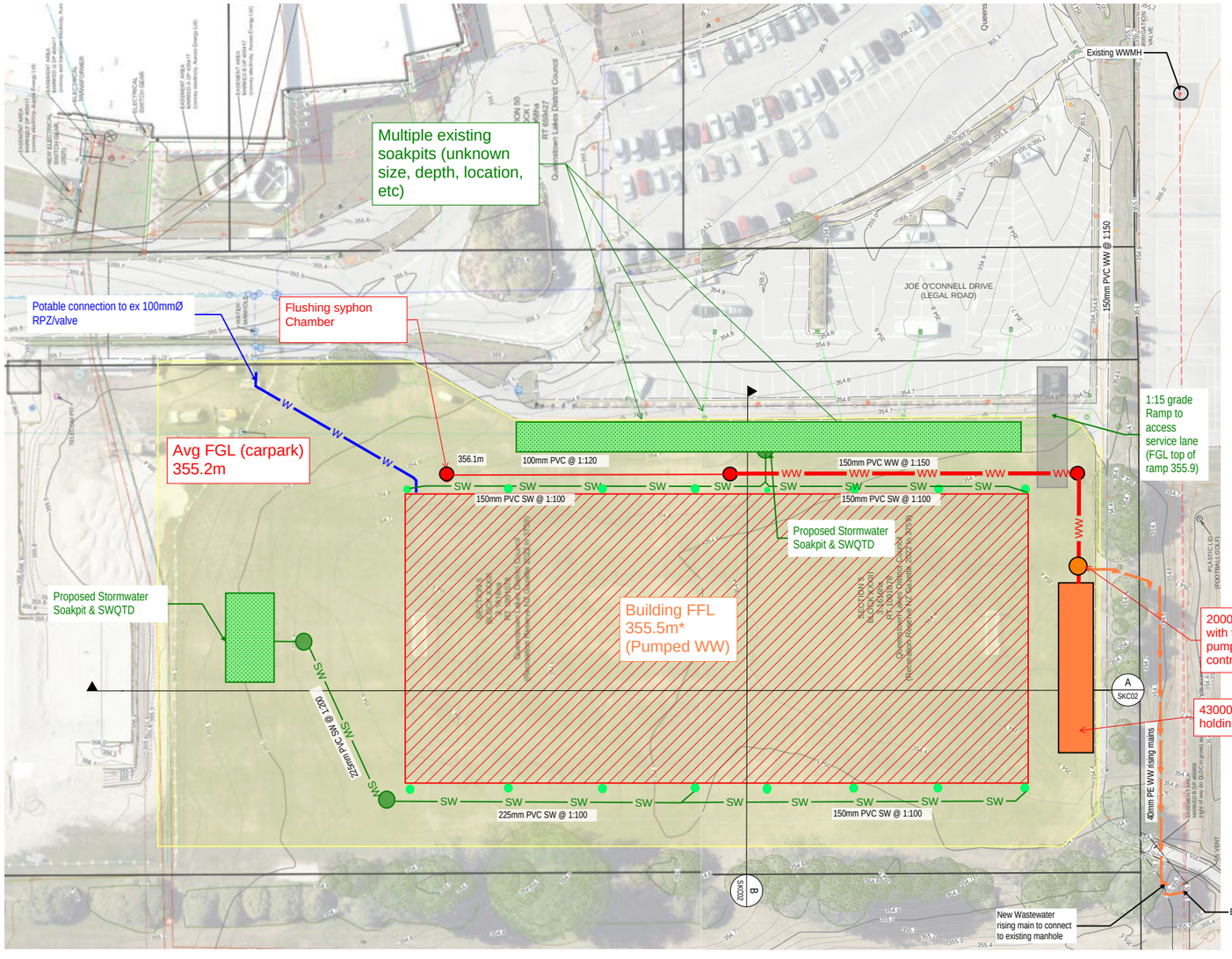
The preferred civil concept is shown on Drawing SKC01 Rev A – Civil Concept Design, dated 10 August 2026. The principal solutions are:

Discipline	Preferred Concept
Storm water	Soakage to ground via soakage pits and SWQTDs, with secondary overland flow paths to internal carriageways and western golf course low point
Wastewater	Option 2 — Pumped discharge via rising main existing wastewater outfall at southern site boundary, subject to network capacity confirmation.
Water Supply	100 mm diameter extension from RPZ backflow prevention assembly to existing 150 mm Principal Supply Main (GIS ID 404660)
Fire Fighting	Onsite fire-fighting water storage tank and booster pump system, independent of reticulated network
Car Park and Access	Fully sealed asphalt car park and access areas with concrete kerb and channel; 200 mm AP65 sub-base + 150 mm TNZ M4 AP40 base course + 30 mm asphalt surfacing

The preferred concept remains subject to QLDC network capacity confirmation, detailed geotechnical verification, final architectural levels, detailed pavement design, storm water soakage testing, and fire engineering design.

Drawing SKC01 Rev A provides the spatial arrangement of the proposed civil infrastructure, including storm water collection and soakage, wastewater, water supply, car parking, access, service areas and proposed levels. Service locations and levels shown are indicative and are to be verified during detailed design.

For a full overview of the preferred option to carry to preliminary design refer to the Appendix.



LEGEND

Site Boundary	SW	Proposed Stormwater	NOTES
Adjoining Boundary	WW	Proposed Gravity Wastewater	1.The nominated levels indicated are provisional only and subject to change during design development.
Proposed Hardstand	W	Proposed Water Supply	2. All services locations shown are indicative only, to be confirmed during design development following investigation of undeground services and soakage testing.
Proposed Building		Proposed Stormwater Soakpit	3.Extent of earthworks to be confirmed at developed design stage
Proposed swale		Proposed Downpipes	4.All heights are based on survey information provided byu Patersons (Vertical Datum NZVD 2016)
Proposed Stormwater Manhole		Proposed option for Wastewater rising mains	
Proposed Wastewater Manhole			

1. INTRODUCTION

This Building Services Summary page notes features of the Mechanical, Hydraulic, Electrical and Fire protection requirements for Queenstown Events Centre & Carpark Project , Located in Frankton, Queenstown. Please refer the full report in the appendix for more detailed information.

2. SUSTAINABILITY

Energy efficiency and sustainability will be incorporated into the building services design where practical and economically feasible. Currently we are proposing the following efficiency and sustainability initiatives:

- The use of air source heat pumps to meets the domestic water heating load.
- Provision of VRF (variable refrigerant flow) type air conditioning.
- Mechanical ventilation utilising heat recovery wherever possible and economic to provide.
- Long life LED lighting proposed throughout with automated lighting controls where practical.
- Provisioning for Solar ready approach, providing cable pathways and provisions on switchboard design for connection of any future Photovoltaic system
- Smart carpark lighting control

3. MECHANICAL ENGINEERING SERVICES KEY FEATURES

3.1 Design Criteria

3.1.1 Internal Design Temperatures

Design parameters are based on the following outside air conditions for Queenstown which represent a 2.5% frequency of occurrence:

- Summer: 25.6°C db, 20.5°C wb
- Winter: -3.2°C db

Internal space temperatures will be controlled to the temperatures as generally indicated.

- Circulation – 20 °C (- 2 °C)
- Courts - 17 °C (heating), – 22 °C (cooling)
- Studios and similar spaces – 16-20 °C (+/- 2 °C)

3.2 Ventilation

Mechanical ventilation systems shall be designed and installed to meet the requirements of the NZ Building Code, NZS4303:1992 and AS 1668.2:2002 with natural ventilation systems complying with NZBC G4/AS1.

Air handling systems will be provided for ventilate the sports hall, these systems shall generally include filtration, heating and cooling coils and supply fans. The heat source is proposed to be a roof mounted heatpump/chiller. Air will be distributed within the sports hall via fabric ducts.

Smoke extract systems are necessary and have been determined as a requirement in the Concept Design Phase (to be further tested in later design stages). This system shall generally comprise roof mounted exhaust fans, which will also fulfil a spill air function.

3.3 Heating and Cooling Systems

Air Conditioning Systems will allow simultaneous heating and cooling between air conditioning units and be individually controllable. The primary plant is proposed to be a VRF/HVRF System including roof mounted Air Source units. Generally conditioned spaces will be provided with in-ceiling fan coil units with local controllers within the space. Refer the building services report in the Appendix for further details of possible options.

3.4 Electrical and Controls

A BMS system is proposed to be provided to control, schedule and log all mechanical system activity. Allowing automated control and scheduling, remote systems control, and fault monitoring and alerting. This will interface with other QLDC systems.

4. HYDRAULIC & SANITARY SYSTEMS

4.1 Domestic Hot & Cold Water Supply

The domestic water system design and installation shall be in accordance with NZ Building Code and AS/NZS 3500:2003 (all parts). Domestic hot water will be generated with hot water heatpumps.

4.2 Sanitary Plumbing and Drainage

The drainage system proposed for the building will be a fully vented modified system and will be designed based on AS/NZS 3500.2:2021. Sanitary plumbing systems including stacks, vents and pipework will be grouped and run to the perimeter of the building below ground level for connection into the site main foul sewer systems provided by the Civil Engineer. Sanitary ware and fittings shall be as detailed in the Architectural documentation.

5. ELECTRICAL SERVICES

The Electrical Systems shall be designed in accordance with all N.Z Building Code Requirements with special reference to the N.Z Electricity Act, the Electricity Regulations and all relevant New Zealand Standards in particular.

The electrical works associated include provision of all switchboards, cabling and cabling support, internal & external luminaires, lighting controls, exit and emergency lighting, telecommunications structured cabling systems, access control & CCTV systems.

5.1 Services Reticulation & Incoming Supply Requirements

The incoming power supply shall be from a new transformer located adjacent to the site, this transformer shall be connected to the existing events centre HV supply cable that runs adjacent to the site, this has been discussed with Aurora in the Concept Design phase. The incoming Telco cabling (fibre) for the building shall enter the site via an underground ducting system and into the building, this shall be routed from the existing Events Centre building to the new building. The calculated preliminary maximum demand is estimated at 510 amps/phase.

The calculated preliminary maximum demand is estimated at 510 amps/phase.

A permeant standby diesel generator is not proposed to be provided as part of this project, however a external wall mounted temporary generator connection panel shall be provided to allow future connection of a generator in a power outage event.

5.2 Lightning Protection

A risk assessment has been completed based on the AS/NZS 62305 calculation method. The risk assessment results do not recommend any lightning protection is required.

5.3 Photovoltaic systems & Electric Vehicle Charging

Provision has been made for electrical connection point for a future PV system, as we understand the client may have intent to provide a photovoltaic (PV) installation under a Power Purchase Agreement (PPA) arrangement. Refer Building Services Report Appendix for PV concept stage memorandum noting potential payback. No electric vehicle chargers are proposed as part of this project.

5.4 Luminaires & lighting

It is envisaged that all luminaires will be LED light sources. Luminaires will be selected that are suitable for the environment they are installed in.

Lighting levels will be in accordance with standard design practice and Sports Lighting guidance.

Ball protection for lighting shall be provided where necessary, or where luminaries are not inherently robust (with IK10 impact rating).

5.5 Lighting Control

Internal lighting shall generally be controlled via automated controls with local manual override capability.

Fully automatic lighting controls would be considered for infrequently used or transient spaces. Automatic lighting controls with local override would be considered for entry / lobby / reception spaces, including time schedule control (generally on in business hours) and presence detection in out of hours periods for security lighting. Studio and multipurpose spaces are proposed to be provided with absence detection and local dimming controls. Courts area lighting control is proposed to be generally automated utilising a system such as Casambi. This type of control system allows full flexibility of control with the lighting, allowing change of lighting scenes from general use for show court, to conference space functions as needed. The added benefit of a Casambi system is that this allows control of individual fittings via an open source mobile device app.

Light switches within the courts area (where required, however generally to be avoided in lieu of controls by scene selection plates external to the courts), shall be minimum IK10 impact protected.

5.6 Emergency Lighting

An Emergency Lighting System shall be provided subject to, and in line with, the recommendations of the Fire Report and New Zealand Building Code.

5.7 External Lighting

External Lighting shall be provided site wide on roadways, paths and car parks etc. Covered areas shall be provided with soffit mounted lighting, carparks generally with column mounted lighting, and building perimeter with wall mounted lighting (with consideration of maintenance access)

5.8 General Power Outlets

General purpose socket outlets shall be provided where required. Socket outlets shall be 10 amps rated, shuttered, switched socket outlets. Typically power outlets shall be provided as standard white plastic, however within the courts areas shall be of minimum IK10 impact protected, the impact protection shall include both the face plate, and any mounting blocks. The additional provision of USB charging outlets will be discussed during the developed and detailed design stages.

Heavy Duty floor boxes shall be provided on all sides of all courts within the courts (outside of playing areas). Each shall have a maximum capacity of 63Amps three phase (approx. 43kW) and are intended to be used for events.

5.9 Electric Underfloor Heating

Electric underfloor heating systems are to be provided to shower areas to minimise slipping risks due to wet floors. Systems shall be provided below tile installations, and controllers will be located in staff only access areas. Controllers also to be interfaced with BMS systems for scheduled control.

5.10 Telecommunications

The building's main communications room shall be used to accommodate the network optical terminal & other central communications equipment. Due to the building size a satellite communications cabinet shall also be provided within the Electrical Switchroom to service communications requirements in this area.

All active equipment will be provided and installed by the Client and is not part of this scope of works. Wireless access data connection points shall be provided throughout the building (Routers provided by client).

5.11 Audio Visual Cabling System

AV systems associated with the spaces are expected to be wired from the local incoming communications room, where amplifiers / media players will be located. Specialist AV designer to advise further during next design phase. Systems within each room are to be independently controllable via wireless controls.

5.12 Access Control / Intruder Detection / CCTV Systems

The access control throughout the building shall be a RFID system, with potential for use of mobile device apps to gain access to the facility and/or specific spaces. The system shall also record and report usage data.

A CCTV System shall be provided throughout the building for constant surveillance.

6. FIRE ENGINEERING

6.1 General

The Fire Engineering Design will be in accordance with the minimum requirements of the NZBC C-Clauses "Protection from Fire". The base reference is the alternate design methodology NZBC C/VM2, with fundamental principles taken from NZ Building Code Acceptable Solutions (C/AS2). NZBC Clauses F6-F8 are also referred to with regards to emergency lighting, signage and fire alarm systems.

NZBC Acceptable Solutions C/AS2 permits event centres with an occupant load of up to 2,000 people, alongside compliance with other prescriptive means of escape requirements such as seating arrangements, aisle widths, walkway widths, and related provisions. As confirmed by the client, the maximum proposed design occupancy is 2,100 people. Currently the seating arrangement and associated aisle and walkway widths do not comply with the prescriptive requirements of the NZBC Acceptable Solutions. Accordingly, the fire design will need to proceed under NZBC Verification Method C/VM2 with associated mechanical smoke control unless the maximum design occupancy is kept below 2,000 people.

The Fire Protection Systems shall be designed in accordance with all NZBC Requirements with special reference to the relevant New Zealand Standards.

6.2 Fire Protection Services

6.2.1 Fire Sprinkler System

A sprinkler system complying with NZS 4541:2020 is proposed to be installed in the Events Centre building.

A single set of fire sprinkler control valves can serve multiple buildings up to a total floor area of 11,000 m^2. We have proposed one set of 100 mm diameter control valves are proposed to be co-located with a fire sprinkler inlet (FSI) in the Sprinkler Valve Room (SVR). The fire alarm indicator (mimic) panel is proposed to be located at the SVR also - preliminary approval of the FSI, FAP and mimic panel locations is yet to occur with FENZ. This FSI and fire indicator panel location needs to be in a prominent location that can be accessed by a FENZ vehicle.

The greatest demand for the sprinkler system is expected to be 550 kPa at 1500 L/min (based on OH3 hazard classification). The town main is expected to be able to supply this, so a sprinkler pump set us unlikely to be required although a flow test should be carried out to confirm during the concept design phase.

6.2.2 Fire Alarm System

Automatic smoke detection is proposed to be installed throughout the Queenstown Events Centre building except where susceptible to false alarms. This is expected to be a 'Type 4' system to NZS 4512:2021 with interconnected smoke detectors, manual call points and sounders. If a Type 4 smoke detector activates then there is sounder activation throughout the entire building resulting in a complete evacuation.

6.2.3 Smoke Control

Based on preliminary assessments to date, it is anticipated that a smoke extract system will be required given the high design occupancy (i.e. > 2,000 people) in the showcourt including tiered seating 15 rows high. At this stage, we recommend allowance for a 60m^3/s roof mounted smoke extract with associated make-up air and control systems. This is to be further developed in the next design stage including a closer assessment of evacuation times and what impact that has on required smoke extract volumes.

6.3 Fire Compartmentation

6.3.1 Fire Ratings

This Concept Design Fire Report is based on the Fire Resistance Ratings aligned to calculated burn-out times as referenced in NZ Building Code C/VM2 document for this building design. The fire resistance rating will be further assessed during developed design once fire modelling progresses.

6.3.2 Protection of Structural Steel

Structural steel may require supplementary protective coating systems to achieve the minimum fire ratings. These can typically be either intumescent paint, cementitious coating systems, or enclosing the steel in fire-rated board system (e.g. GIB Fyreline). There are advantages and disadvantages with both coating options including generally higher supply costs for intumescent paint but more stringent application conditions versus susceptibility to damage for cementitious coating systems. The Architectural preference for exposed steel is usually intumescent paint for aesthetic purposes. A specific review should occur during the detailed design phase to recommend a preferred solution.

Fire-rated protection of structural steel is to be documented by the Architect or Structural Engineer. The Fire Engineer will provide strategic advice regards fire separation locations and required fire resistance ratings (FRRs).

6.4 Means of Escape

6.4.1 Number of Escape Routes

Minimum number of escape routes from C/AS2 has been provided as guidance. The compliance of the means of escape from the building is to be assessed in preliminary design. The number of escape routes provided with the concept design sketches are seen to meet these requirements.

6.5 Occupancy

The concept design has been based on the maximum occupancy of 2,100 people, as confirmed by the client, which requires NZBC C/VM2 to be used. If the total number did not exceed 2,000 people, then this could allow NZBC Acceptable Solution C/AS2 to be used

Refer to appendix 7.4.3 and 7.4.4 for more detail

6.4 Acoustics

Recommended Design Criteria Summary

Parameter	Criteria		
	Sports / Exhibition / Banquet	Conference	Concert (amplified music)
Occupied reverberation Time (RT)[6]	≤ 2.5 secs	1.4 ± 0.2 secs	1.4 ± 0.2 secs
Internal sound levels			
Building Services [1, 2]	NC 40 - 45	NC 30 - 35	NC 35 - 40
Aircraft	40 dB L_{dn}	30 dB L_{dn}	35 dB L_{dn}
Overall [2, 3, 4]	45 – 50 dB L_{Aeq}	35 – 10 dB L_{Aeq}	40 – 45 dB L_{Aeq}
Rain noise[5]	≤ 50 dB L_{Aeq}	≤ 35 dB L_{Aeq}	≤ 40 dB L_{Aeq}
Sound emissions (received in residential zone)	Daytime: 50 dB L_{Aeq} Night-time: 40 dB L_{Aeq}		

1 NC: Noise Criteria measured between and including the octave band centre frequencies from 63 Hz to 4 kHz. NC is a method used to assess background noise in a number of octave bands and assign a single number. L_{Aeq} to be measured as a 30 second average

2 Where criteria are presented as a range, the lower value in the range is the design objective and the higher value is the maximum allowable level on site.

3 The space criteria for continuous noise must make allowance for the cumulative effects of noise from all HVAC services including plant break-in noise, downduct noise and air-regenerated noise.

4 These internal limits are applicable with windows and doors closed.

5 Based on a rainfall rate of 15 mm/hr occurring an average of 5 min/month

6 These values apply to the mid-frequency reverberation time (average of 500 Hz and 1 kHz octave bands). The reverberation time at lower frequencies (125Hz and 250 Hz octave bands) should not be more than 25% higher than the tabled values.

Proposed Building Envelope Construction

Building element	Baseline design	Conference construction uplifts	Concert construction uplifts
Roof/ceiling	Warm roof system + Suspended absorptive ceiling (see Section 5.0 for further details)	N/A (as per baseline)	2x13 mm plasterboard fixed to the underside of the purlins **in addition** to an absorptive ceiling
Walls (Concrete option)	Precast concrete panels with windows provided at high level only	N/A (as per baseline)	N/A (as per baseline)
Walls (Warm wall option)	Warm wall system (100 mm thick) 90 mm timber framing + fibrous batts in the framing cavity 1x13 mm standard plasterboard lining	N/A (as per baseline)	2x13 mm high density plasterboard internal lining to north, south and western wall
External doors	STC 25	STC 30	STC 35
Roller shutters	Permitted	May be permitted	Not permitted

Proposed Mechanical System Requirements

Duct parameter	Baseline design	Conference construction uplifts	Concert construction uplifts
Maximum permitted duct velocities	Main ducts: 6.5 m/s Run-out ducts: 5.0 m/s	Main ducts: 4.5 m/s Run-out ducts: 3.0 m/s	Main ducts: 5.5 m/s Run-out ducts: 4.0 m/s
Attenuation	Supply: 900 mm long attenuator + all ductwork with minimum 50 mm thick internal linings Return: 2400 mm long attenuator	Supply: Baseline attenuator increased to 2400 mm long Return: Baseline attenuator increased to 2x2400 mm long attenuators + Minimum 5 m of 50 mm thick internal lined duct	Supply: Baseline attenuator increased to 1200 mm long Return: Baseline attenuator increased to 3600 mm long + Minimum 5 m of 50 mm thick internal lined duct
Air distribution sound power levels	Supply: 50 dB L_{WA} / metre Fabric duct proposed Return: NC 40	Supply: NC 25 Fabric duct likely unsuitable and solid duct with discrete diffuser would be required. Return: NC 30	Supply: NC 30 Fabric duct likely unsuitable and solid duct with discrete diffuser would be required. Return: NC 35

Proposed Courts Internal Finishes

Building element	Baseline design	Conference construction uplifts	Concert construction uplifts
Expected number of people	50 - 1500	2000	2000
Ceiling	Suspended absorptive ceiling panels (Heradesign) covering 100 % of the ceiling area on minimum 200 mm cavity Ceiling panels should achieve minimum performance ratings of NRC 0.85 and CAC 35 Heradesign Fine or Superfine with a 50 mm thick and 50 kg/m³ dense fibrous batts provided in cavity behind with an overall cavity depth of at least 200 mm would achieve these requirements.	N/A (as per baseline)	N/A (N.B. plasterboard noise control ceiling required – refer Table 3)
Walls	275 m² of minimum 50 mm thick broadband fibrous panels (e.g. Autex Quietspace) 300 m² of Perforated/Slatted panels (minimum 20% open area) with 50 mm thick fibrous backing	An **additional** 275 m² of 50 mm thick broadband fibrous panels + An **additional** 300 m² of Perforated/Slatted panels	As per conference uplift

Refer to appendix 7.4.5 for more detail.

6.6 Traffic

Project Summary

A February 2026 survey indicates that approximately 160 additional carparks may be required to cater for additional parking demand to provide for the new standalone building.

Based on this analysis parking would peak at:

- 76-82% occupied on weekdays 3-6pm (acceptable)
- 102% on Saturday 3-4pm but otherwise is 82% or less (be good to understand what may have caused that single spike and potentially reschedule activities or provide temporary overflow parking)
- 86-92% on Sunday 3-5pm (this is a little higher than what is ideal but could be supported with smart wayfinding)

Additional temporary parking capacity may be required to accommodate one-off events, especially if these coincide with typical peaks in QEC activity. It is recommended that:

- Temporary parking could be provided using grassed areas not under use
- The proposed addition of 160 car parks should be sufficient parking for a 500-person
- A 2,000-person indoor event may require up to an additional 100 temporary car parks if scheduled during periods with low levels of activity at the QEC, or as many as 300-400 temporary car parks should these coincide with peak parking activity.
- The above parking estimates do not extend to consider staff parking requirements which would be additional to the figures. It is recommended that engagement be undertaken with Council to understand likely staff numbers such that these can be added to the assessment.

The above summary is based on a traffic count undertaken in February 2026. QEC has advised that this period is unlikely to be representative of typical traffic conditions and has identified October as a more appropriate time for traffic monitoring. The assumptions outlined above will therefore be reviewed and updated once the additional traffic count scheduled for October has been completed.

Refer to appendix 7.4.6 for more detail.

6.5 Planning

Alteration to Designation 29 – Proposed Amendment

The Council as the requiring authority for Designation 29 can seek to alter the designation via Section 181 of the Resource Management Act 1991 (RMA) in order to enable the proposed facility at the QEC.

An efficient approach to cater for the proposed facility is to expand the existing CDA within Designation 29 so as to incorporate the required building height for the building.

While there is the option for a resource consent to be applied for in terms of the proposed facility under the PDP via the underlying zone (Community Purposes Zone - CPZ), the recommended approach is to alter Designation via Section 181 of the RMA. This view is formed on the following basis:

1. Designation 29 is specific to the QEC, while the CPZ is a generic District wide zone.
2. The designation pathway more easily enables activities that have large degrees of non-compliance when compared to a standard resource consent process.
3. Designation 29 can be altered in a manner so that any future approvals are done via Outline Plan approvals, as opposed to new resource consents (or variations to such). Outline Plans are faster and more cost efficient when compared to resource consent applications.
4. From long term planning and administrative perspectives, it is more efficient that an expanded QEC is managed by one altered designation, as opposed to the existing designation and a standalone resource consent.

Via Section 182(3) of the RMA, the Council in its territorial authority may at any time alter a designation in its district plan or a requirement in its proposed district plan if:

(a) the alteration

- involves no more than a minor change to the effects on the environment associated with the use or proposed use of land or any water concerned; or
- involves only minor changes or adjustments to the boundaries of the designation or requirement; and

(b) written notice of the proposed alteration has been given to every owner or occupier of the land directly affected and those owners or occupiers agree with the alteration; and

(c) both the territorial authority and the requiring authority agree with the alteration

An alteration to a designation is treated similar to a resource consent in terms of notification under the RMA. If the requirements of Section 182(3) of the RMA are met, then the alteration to Designation 29 can be processed on a non-notified basis. Alternatively, if the requirements of Section 182(3) of the RMA are not met and the effects are considered to be more than minor, some form of notification will be required to alter Designation 29.

The positive attributes that will assist gaining permission to alter Designation 29 for the proposed facility include the following:

1. The facility will provide much needed recreational indoor space for community use.
2. The facility fulfils the purpose of Designation of 29.
3. The facility is appropriately co-located with the existing central hub at the QEC (buildings, parking and amenities).
4. The facility is located substantial distances from privately owned land (excluding land owned by the Queenstown Airport Corporation- QAC).

Refer to appendix 7.4.7 for more detail.

7. Appendix

7.1 Architectural Drawings

7.2 Operational Brief Update

7.3 Safety in Design Register

7.4 Sub-Consultant Design Reports/Design Memos

- 7.4.1 Structural & Civils
- 7.4.2 Services
- 7.4.3 H1
- 7.4.4 Acoustics
- 7.4.5 Traffic
- 7.4.6 Planning

7.5 RMA Sports Indicative Schedule & Pricing

7.6 Alloyfold Retractable Seating Pricing

7.7 Existing Health+Wellness Study

7.8 Existing Back of House Study

7.1 Architectural Drawings



Concept Design Drawing Sheet List		
Sheet Number	**Sheet Name**	**Current Revision**
SK - Concept Design		
SK-0001	COVER SHEET	
SK-0010	SITE PLAN (PART 1)	
SK-0011	SITE PLAN (PART 2)	
SK-0101	GROUND FLOOR PLAN	
SK-0102	LEVEL 1 PLAN	
SK-0103	ROOF PLAN	
SK-0201	GROUND FLOOR - RCP	
SK-0301	ELEVATIONS	
SK-0401	SECTIONS	
SK-0402	SECTIONS	
SK-0501	SHOWCOURT SETUP - 1000PX	
SK-0502	SHOWCOURT SETUP - 2000PX	
SK-0503	SHOWCOURT SETUP - 2000PX	
SK-0901	GROUND FLOOR - AREA PLAN	
SK-0902	LEVEL 1 - AREA PLAN	
SK-0903	ROOF - AREA PLAN	

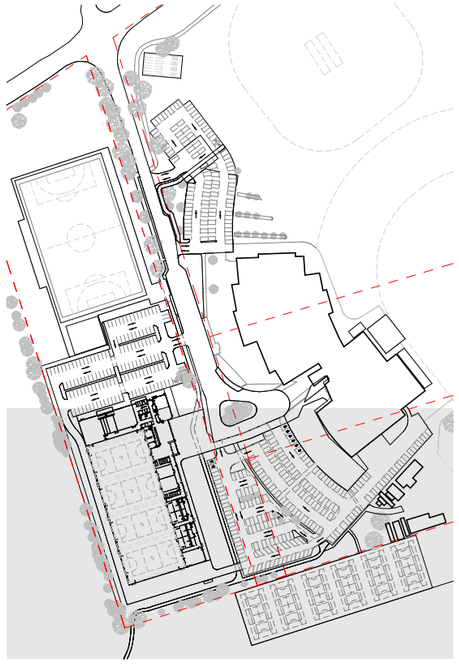
Queenstown Events Centre

COVER SHEET SK-0001 REV

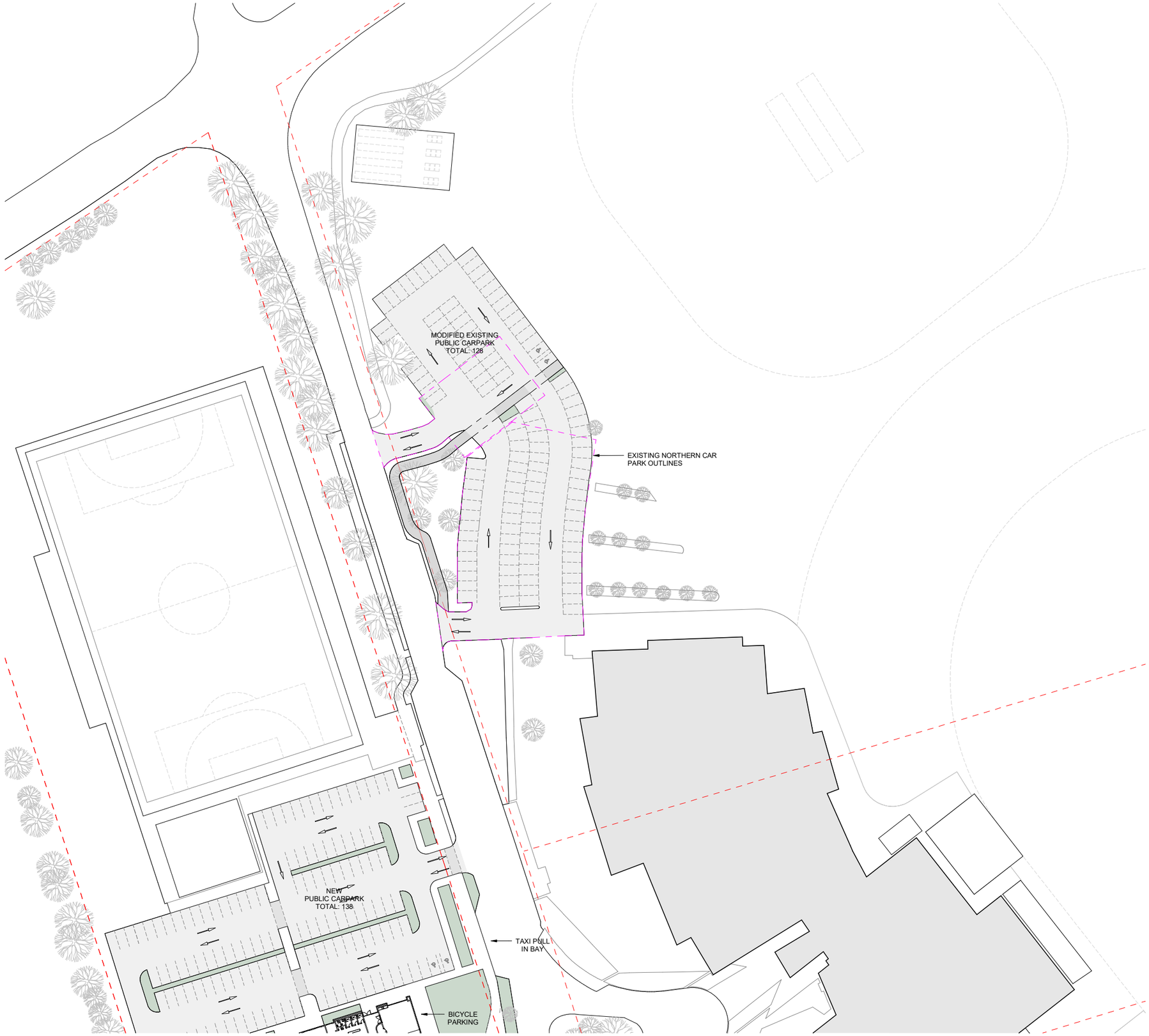
215101

CONCEPT DESIGN

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1 | 1 : 2000 Plan
KEY PLAN



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PROJECT No. **215101**

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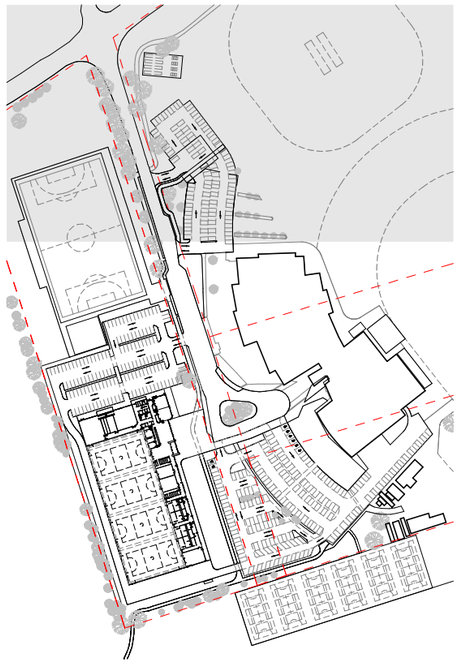
CLIENT: **QUEENSTOWN-LAKES DISTRICT COUNCIL**

DRAWING **SITE PLAN (PART 1)**

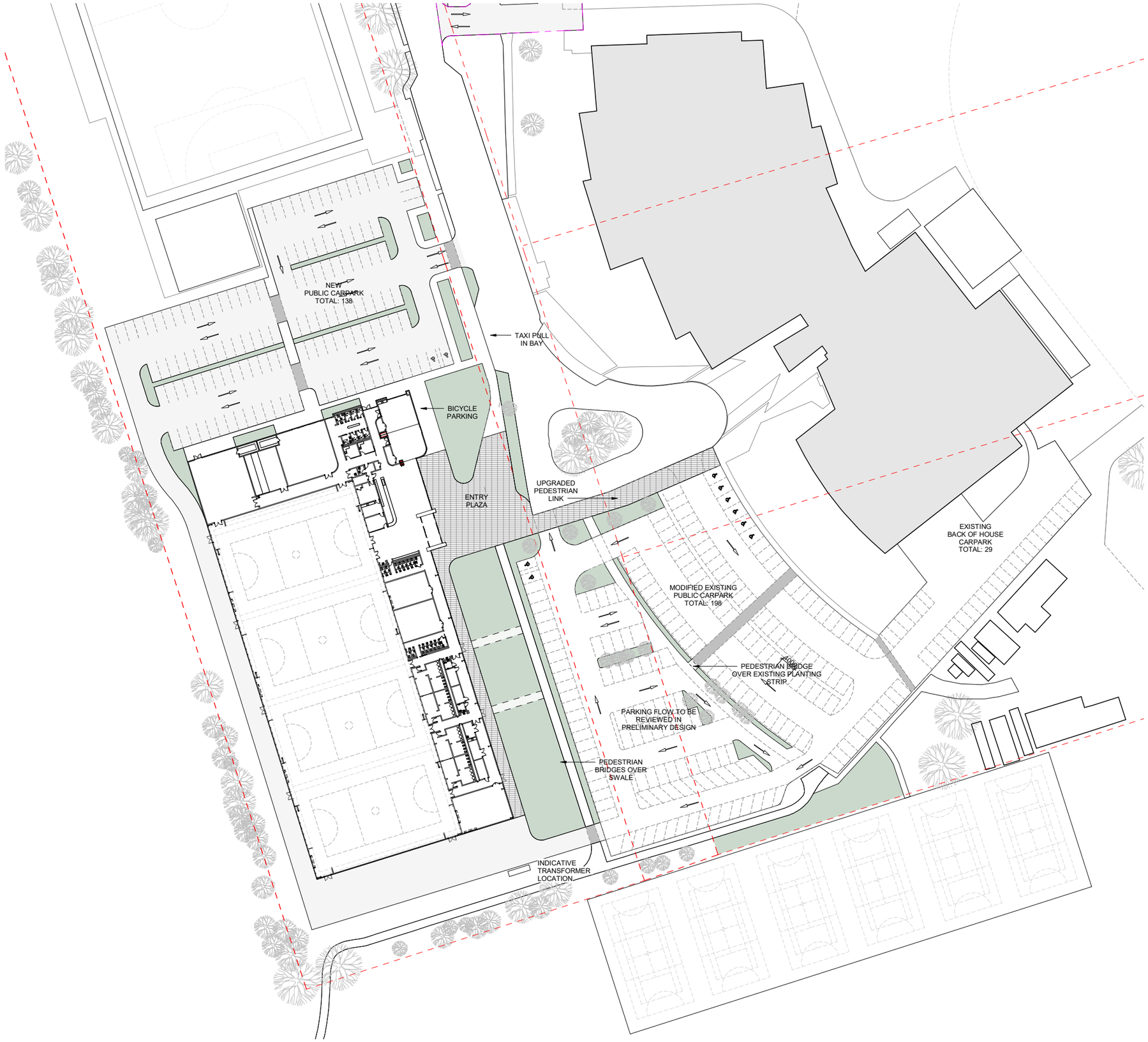
SCALE @ A1 **As indicated**

DRAWING No. **SK-0010**

REV.



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SK-0501 | KEY PLAN

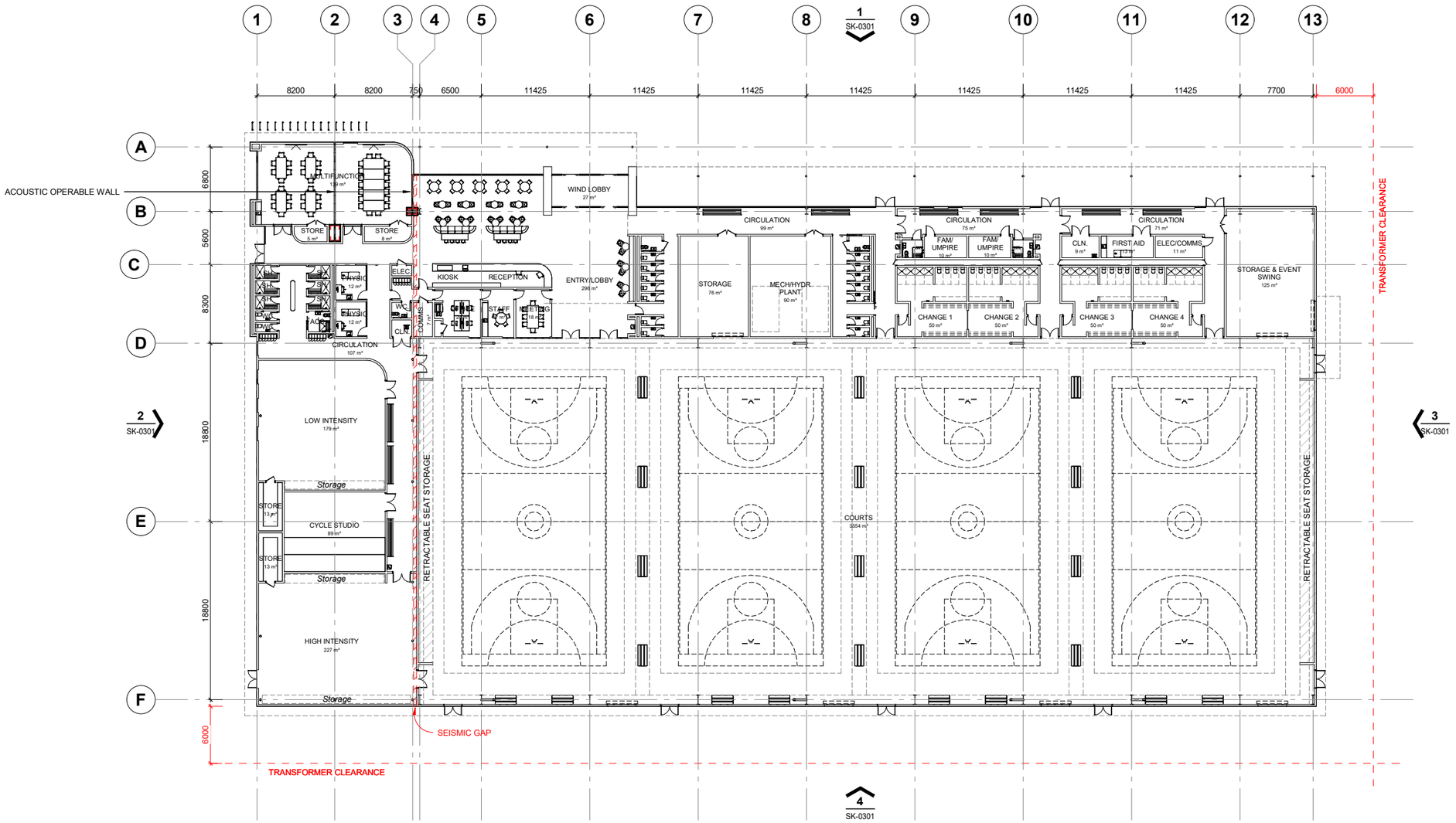


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14/08/2026 | CLIENT: **QUEENSTOWN-LAKES DISTRICT COUNCIL** | DRAWING **SITE PLAN (PART 2)** | SCALE @ A1 **As indicated** | PROJECT No. **215101** | DRAWING No. **SK-0011** | REV.

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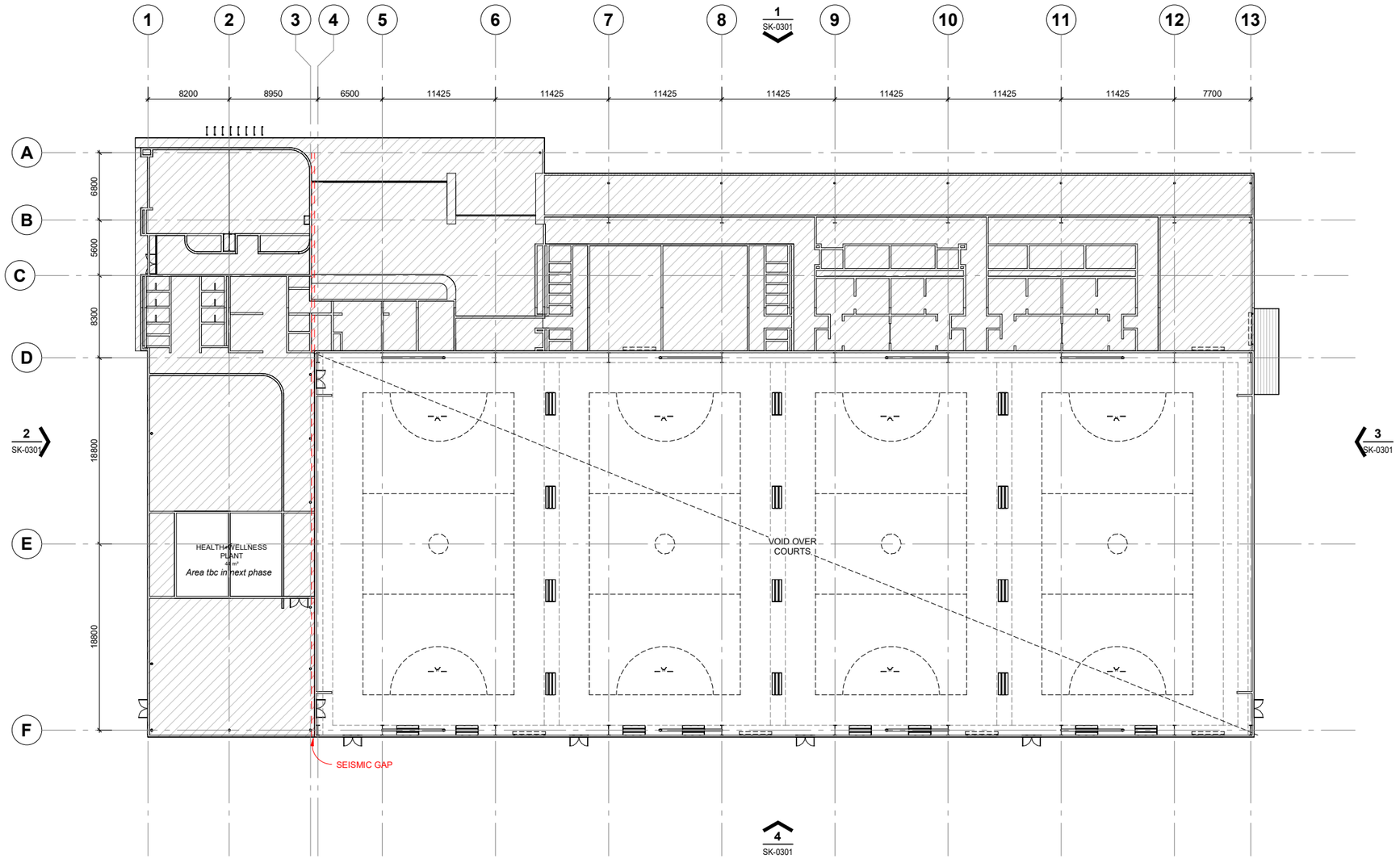


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14/08/2026 CLIENT: **QUEENSTOWN-LAKES DISTRICT COUNCIL** DRAWING **GROUND FLOOR PLAN** SCALE @ A1 **1 : 250** PROJECT No. **215101** DRAWING No. **SK-0101** REV.

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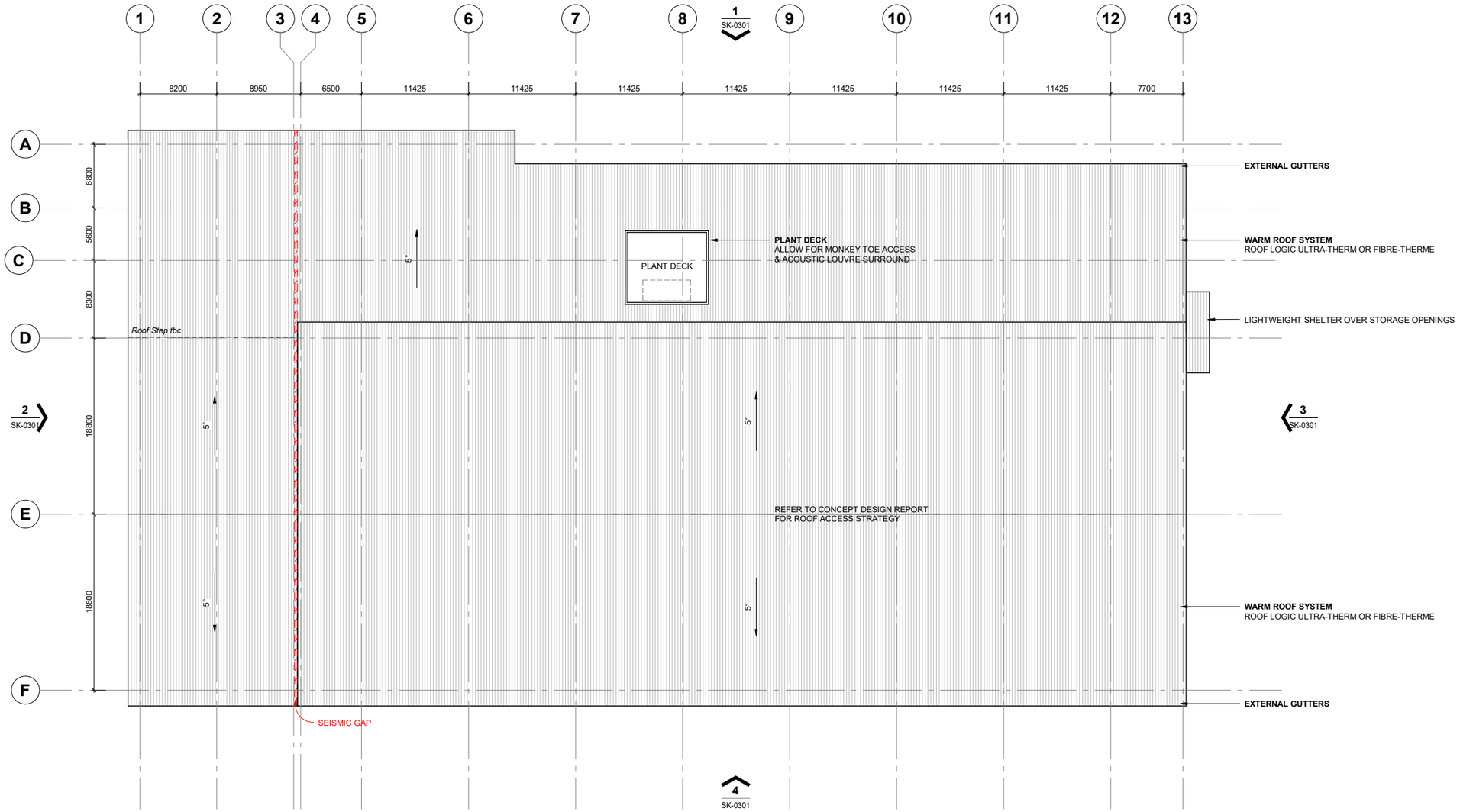
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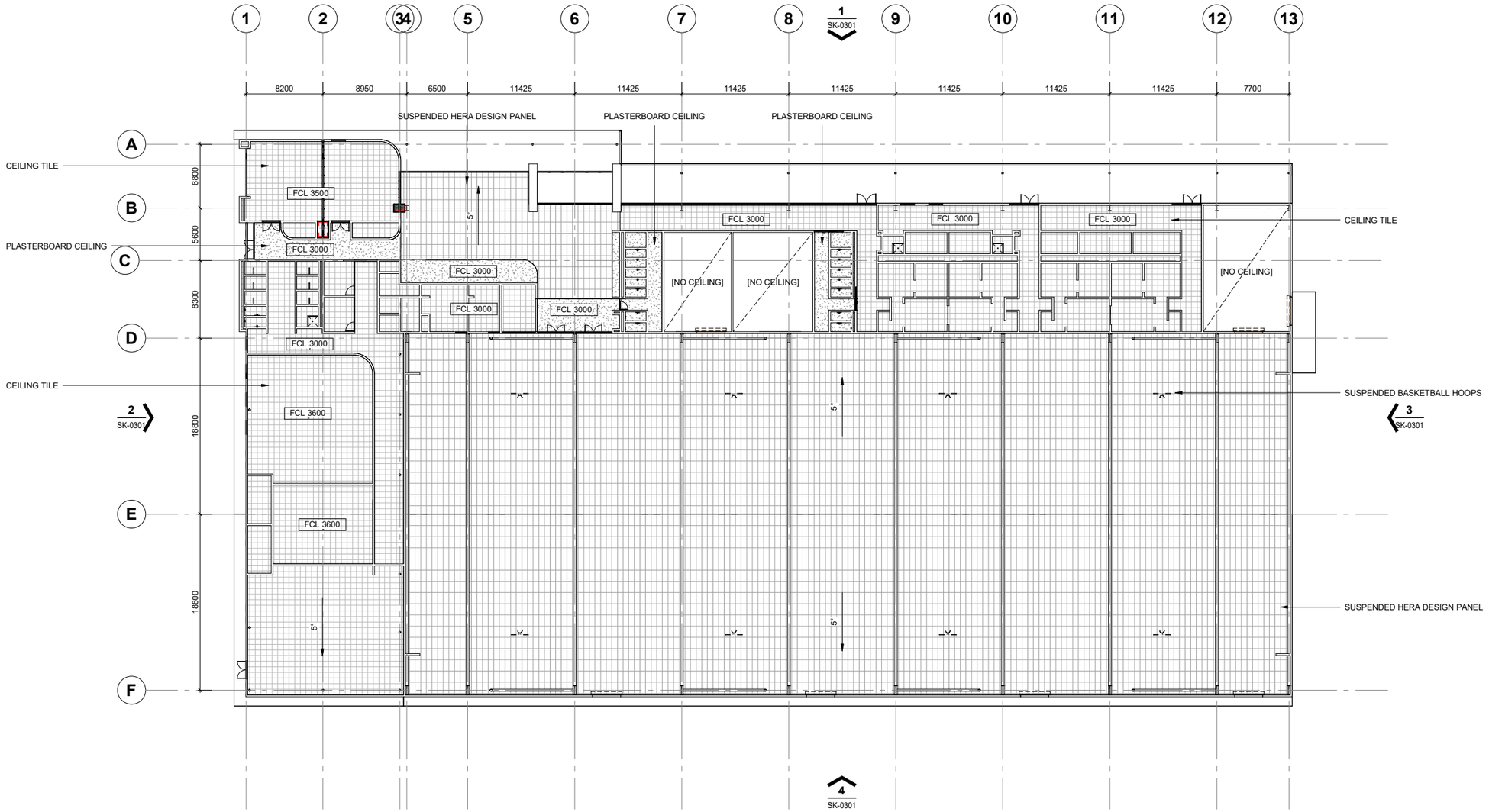
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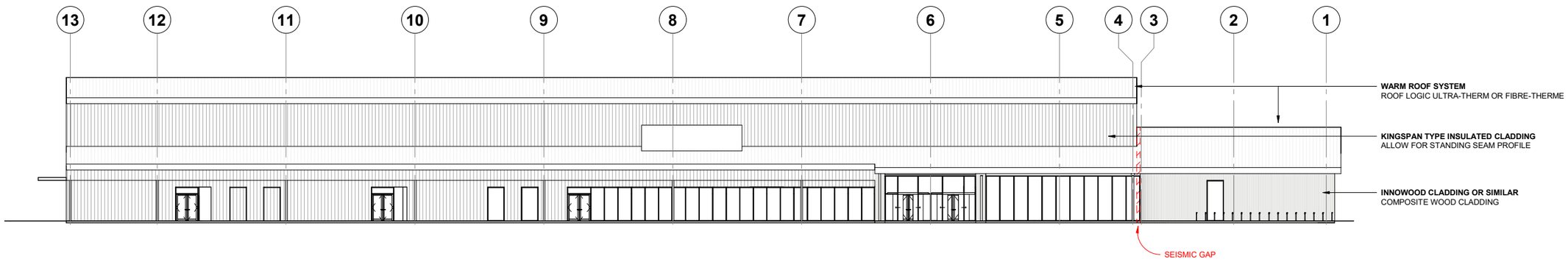
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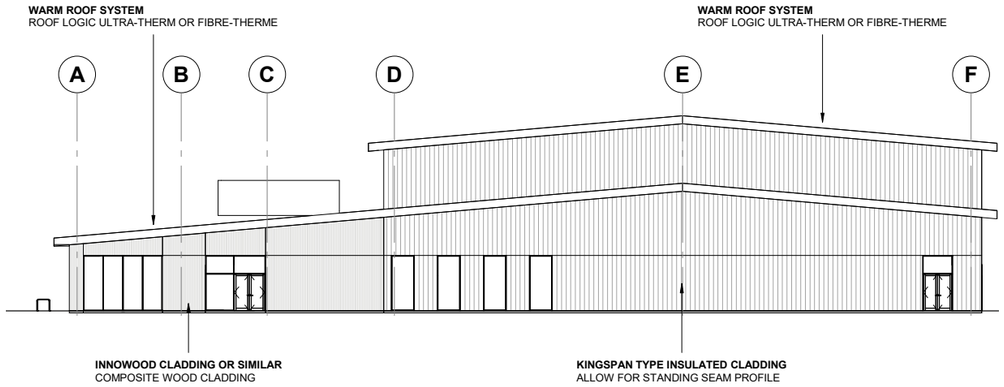
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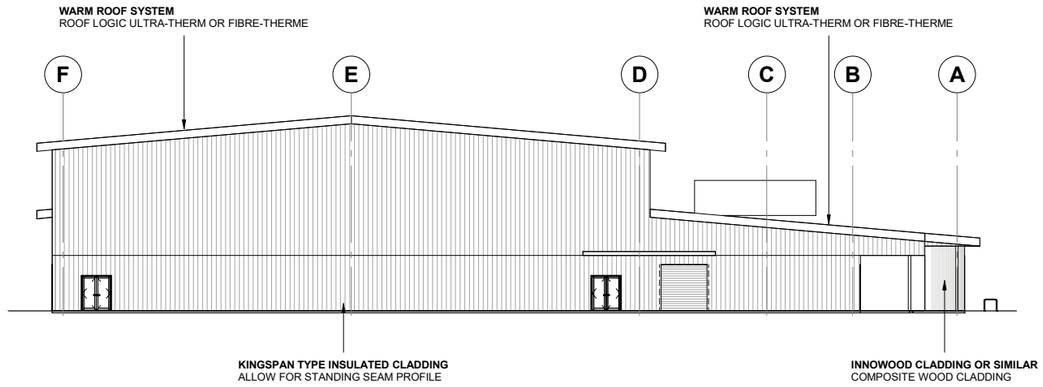
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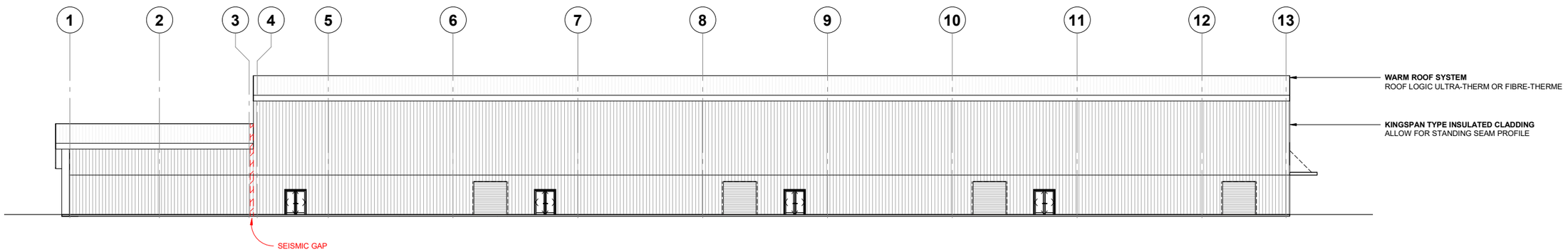
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A1-0801 | EAST ELEVATION



2 | 1 : 200 Elevation
A1-0801 | NORTH ELEVATION



3 | 1 : 200 Elevation
A1-0801 | SOUTH ELEVATION



4 | 1 : 200 Elevation
A1-0801 | WEST ELEVATION

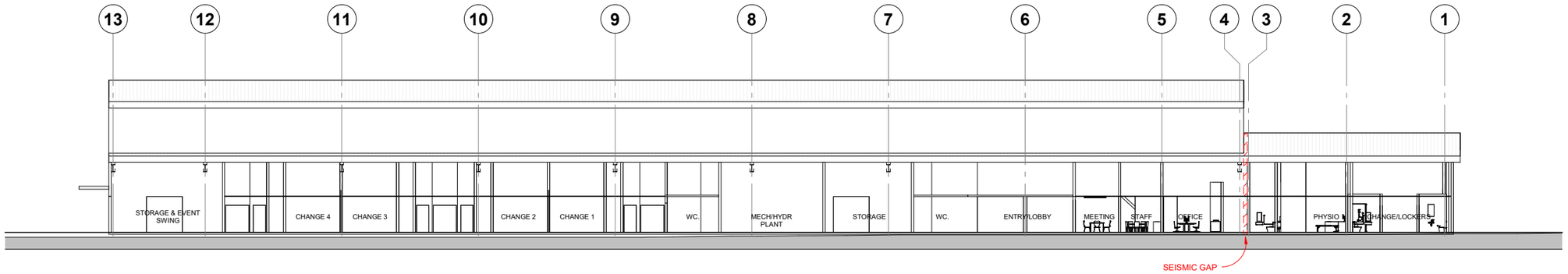
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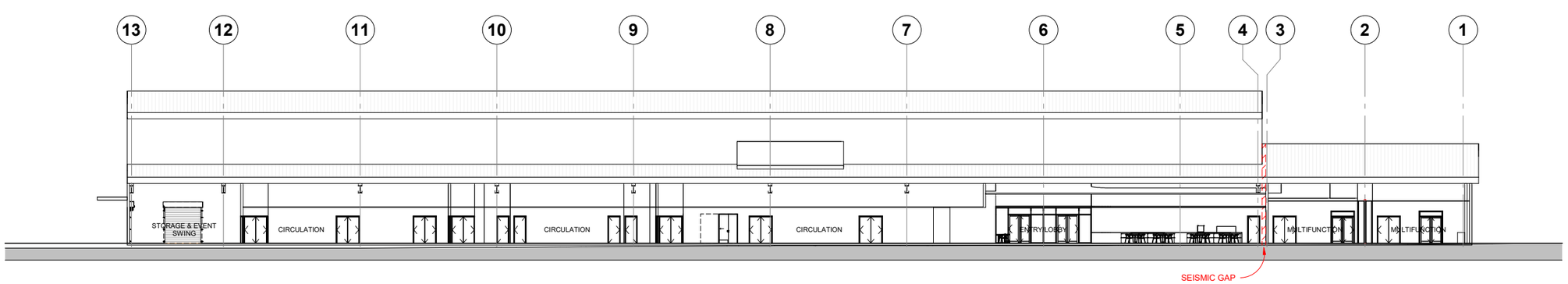
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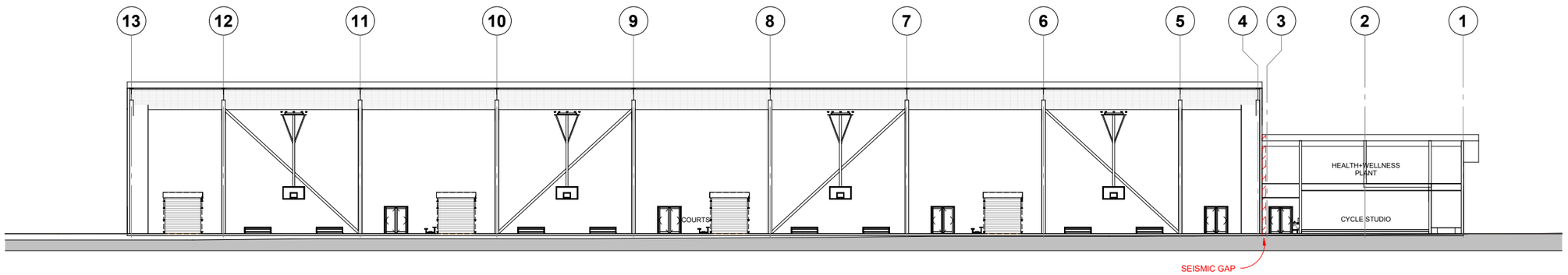
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SS-SK-0001 LONG SECTION 1



2 | 1 : 200 Plan
LONG SECTION 2



3 | 1 : 200 Section
LONG SECTION 3

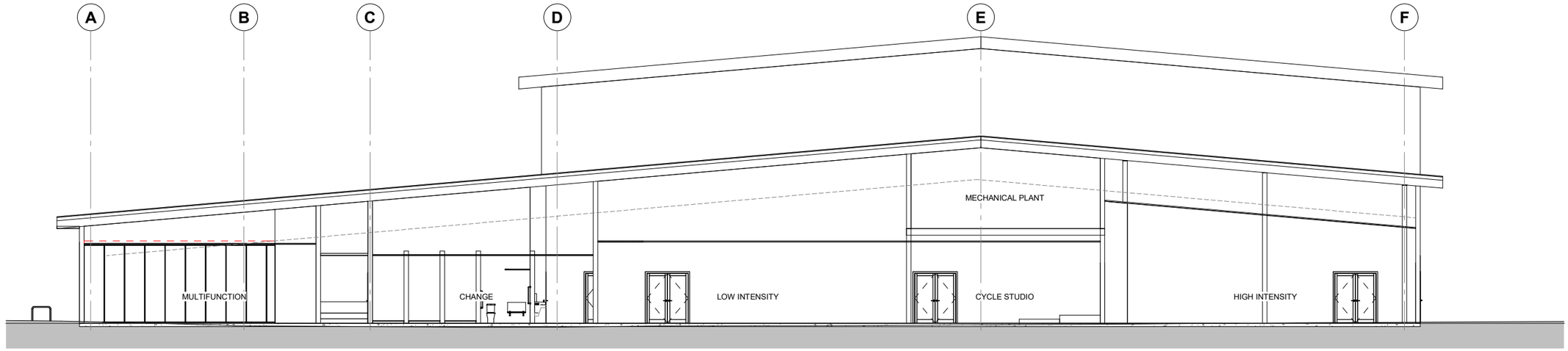
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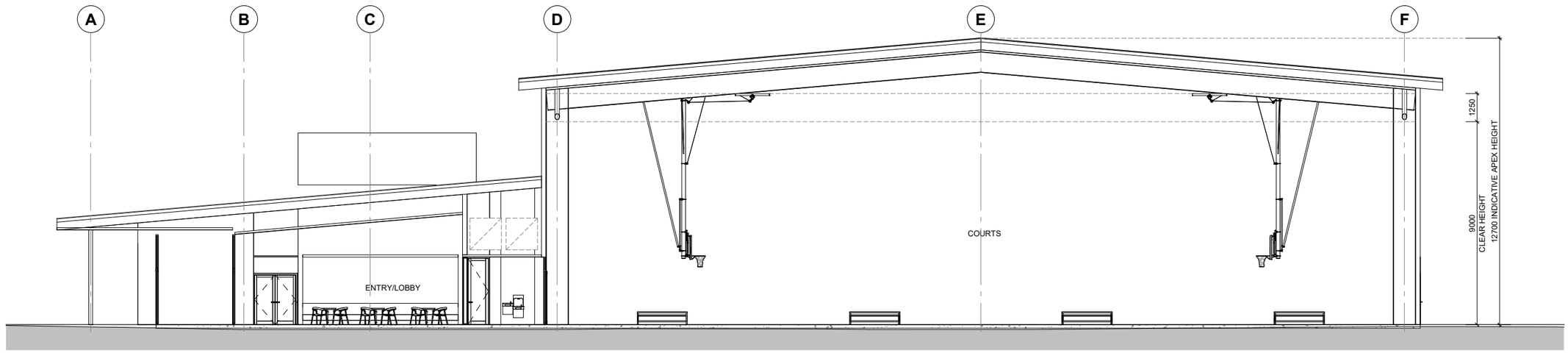
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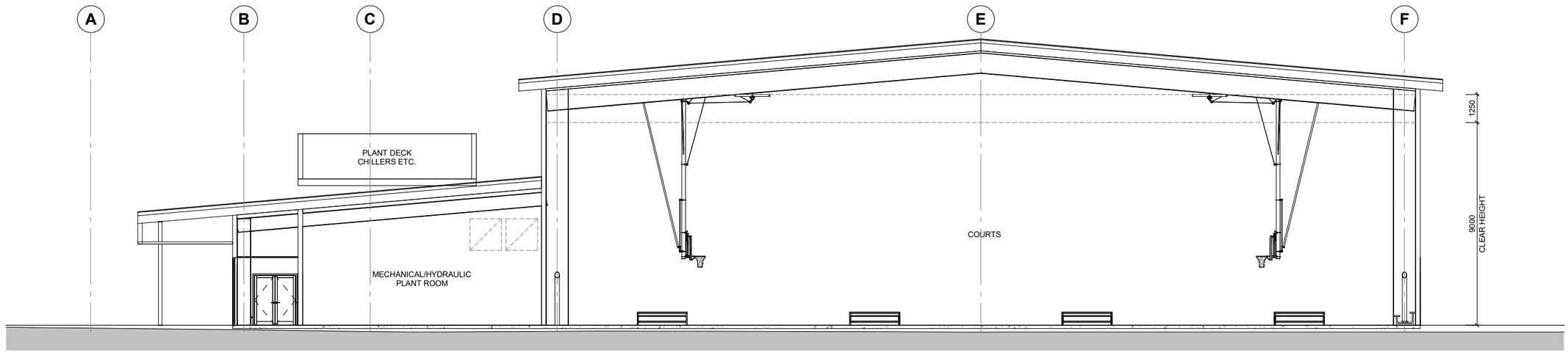
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SECTION 1



2 | 1 : 100 Cross Section
SECTION 2



3 | 1 : 100 Cross Section
SECTION 3

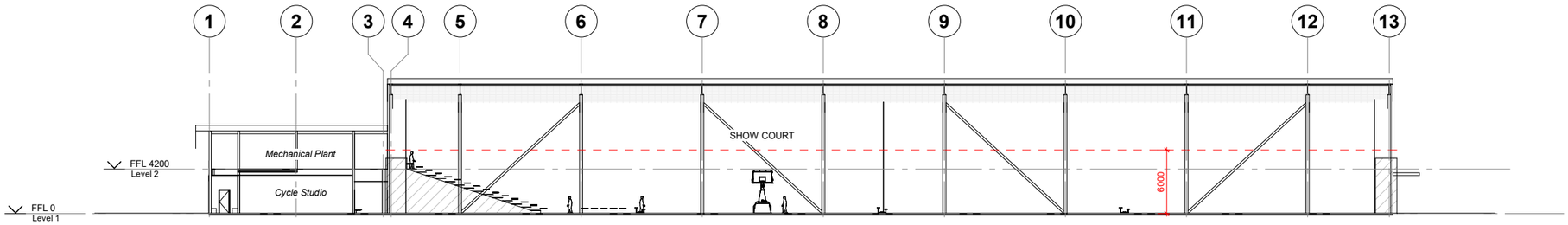
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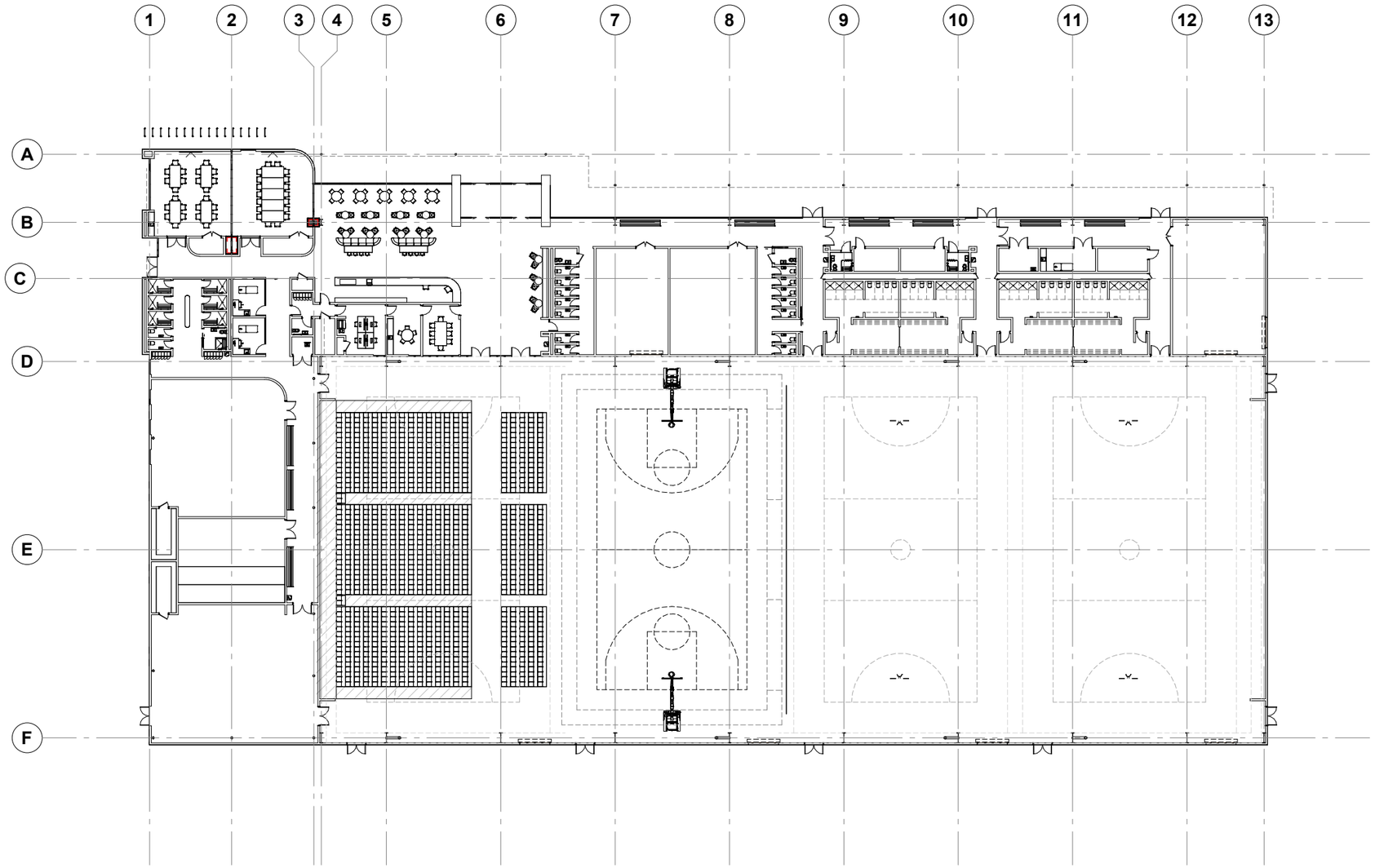
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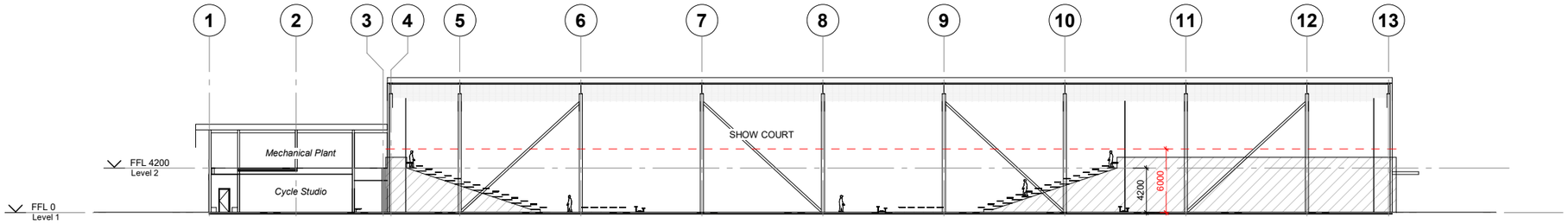
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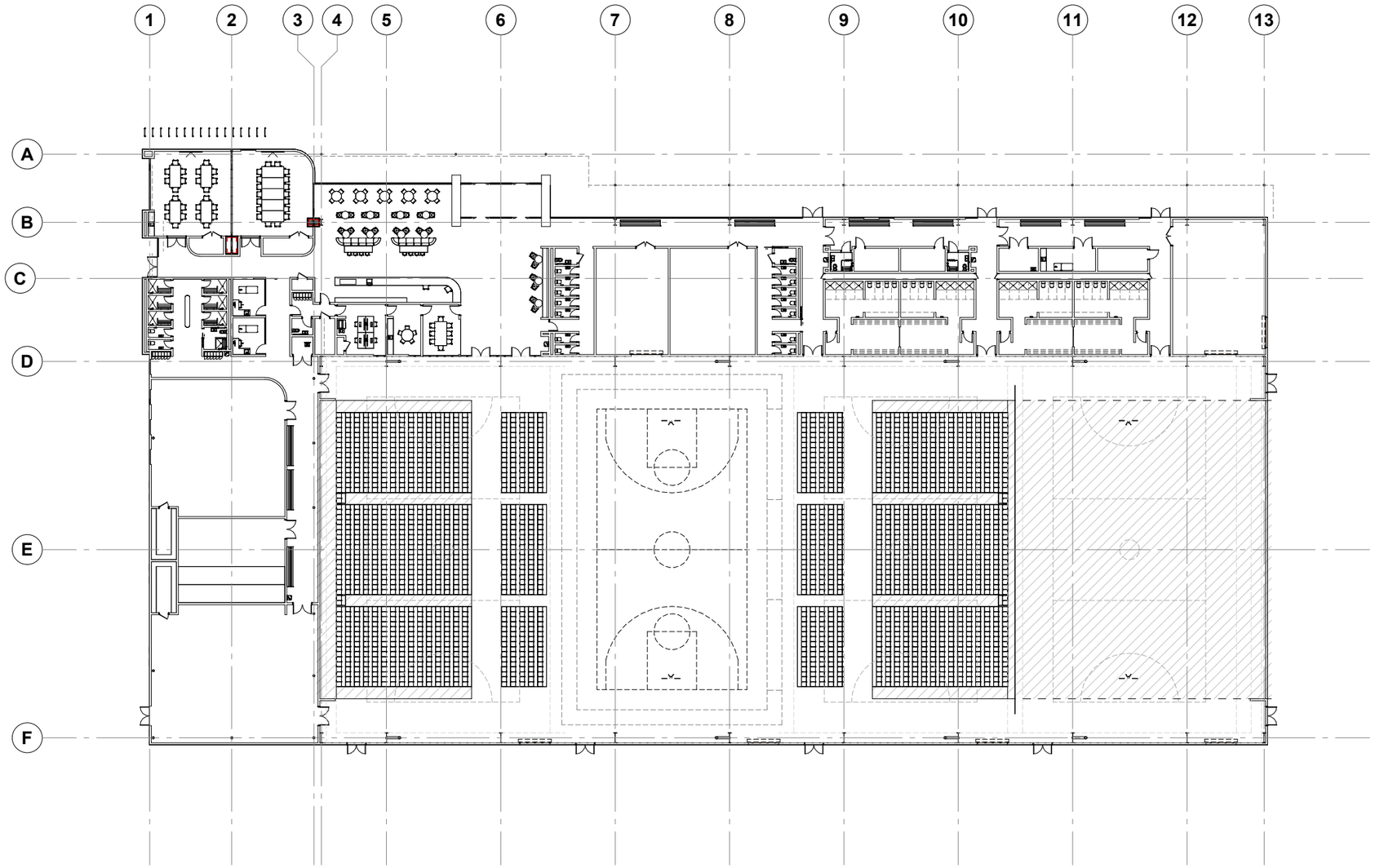
DRAWING **SHOWCOURT SETUP - 1000PX**

SCALE @ A1 **1 : 250**

DRAWING No. **SK-0501**

REV.





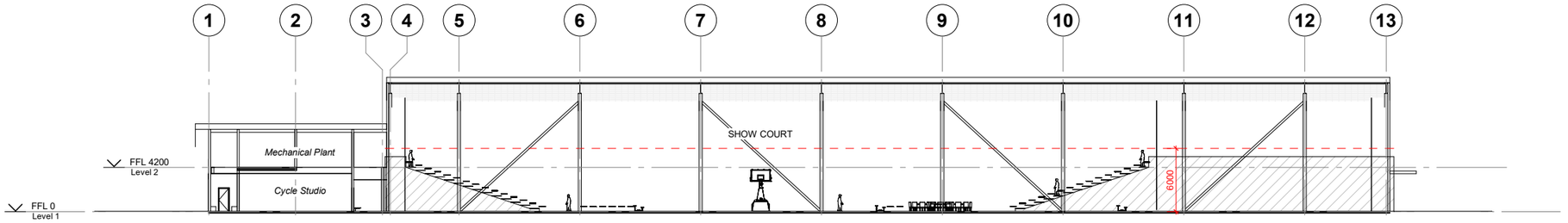
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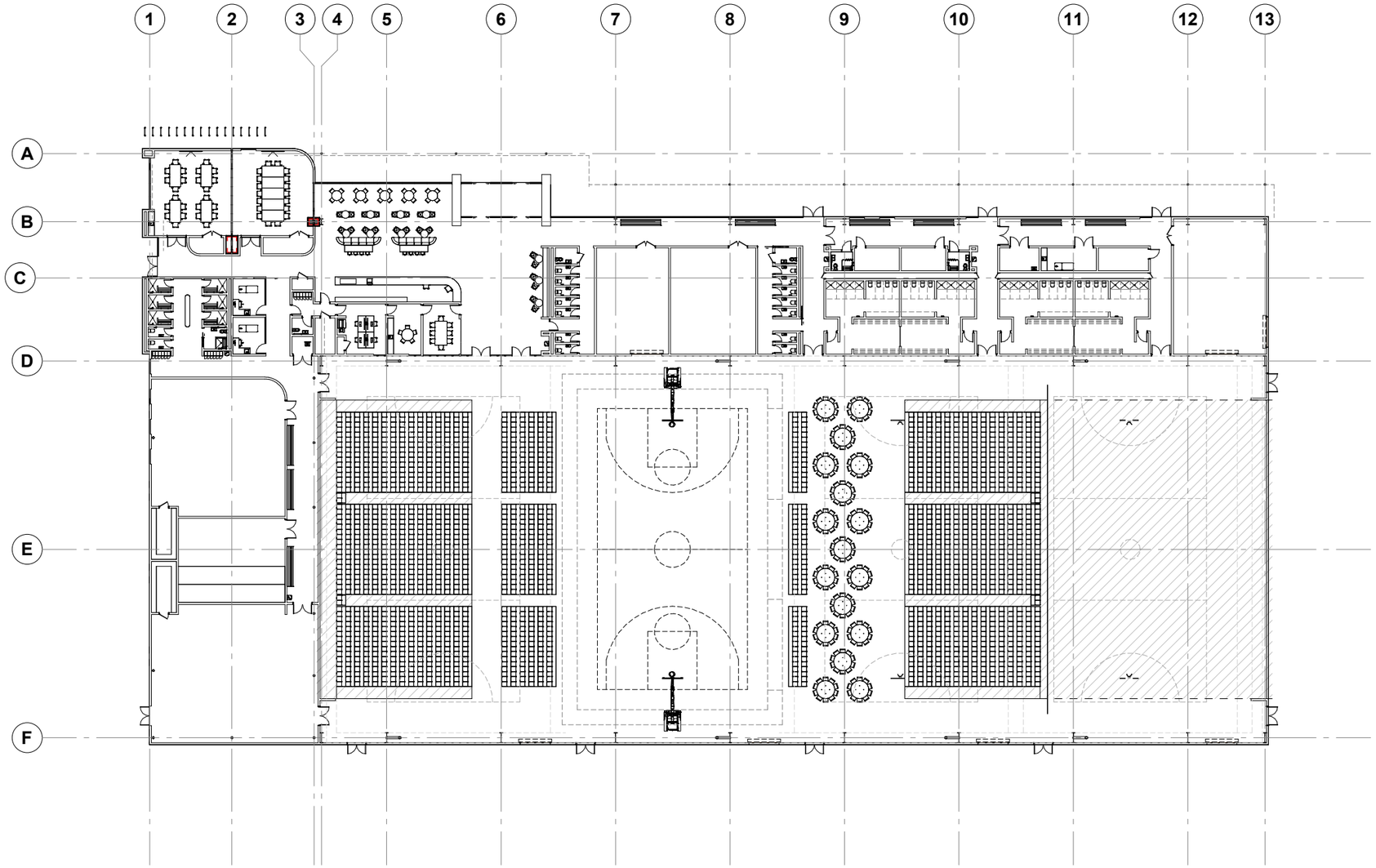
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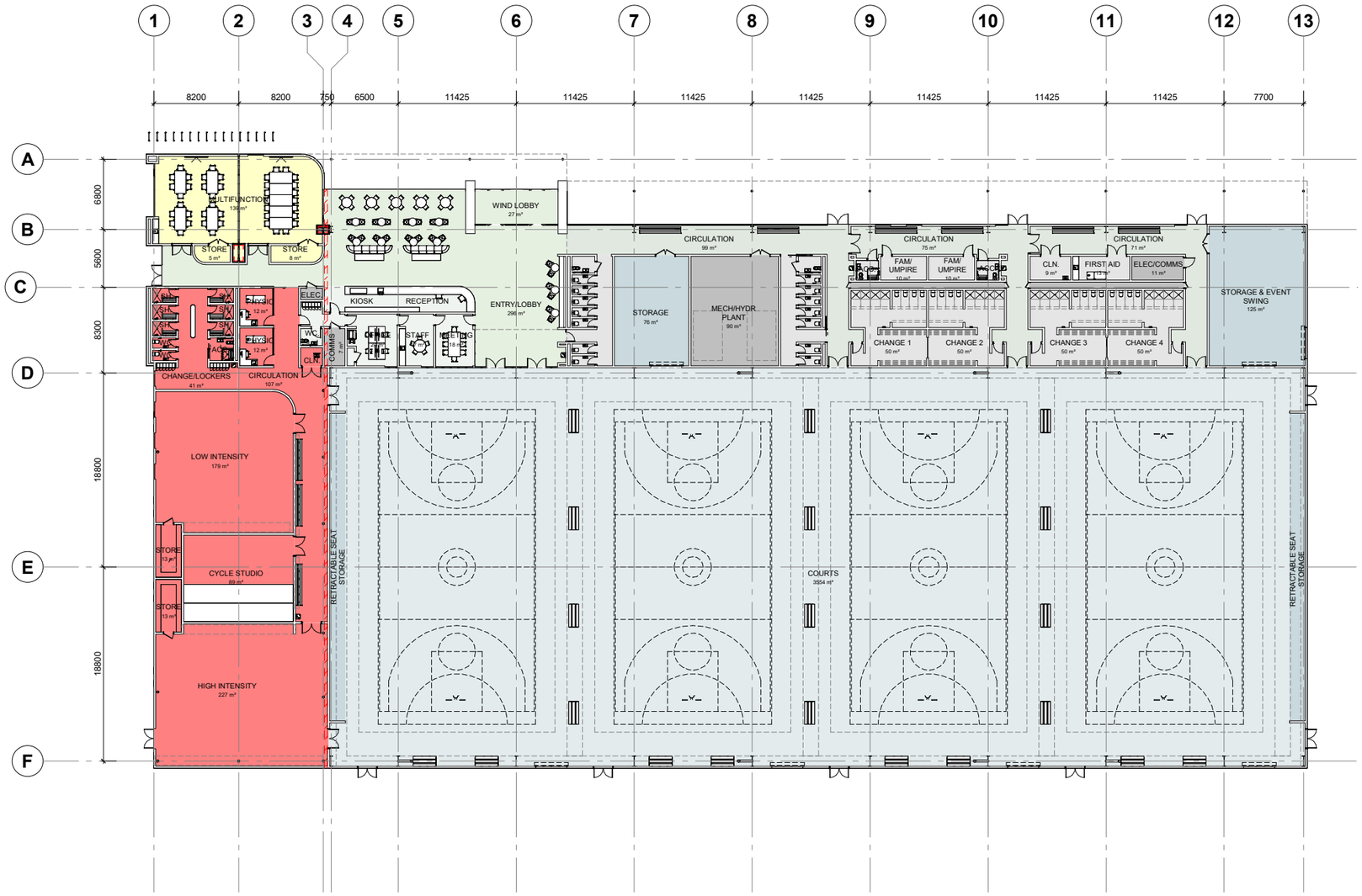
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7.2 Operational Brief Update

Area Plans

ROOM AREA SCHEDULE (NET)	
Occupancy	Area
BATHROOMS & CHANGE ROOMS	322 m²
CIRCULATION	245 m²
COURTS	3554 m²
ENTRY LOBBY / CAFE KIOSK	323 m²
HEALTH & WELLNESS	726 m²
MULTIFUNCTION	152 m²
PLANT	129 m²
RECEPTION & OFFICES	106 m²
STORE	293 m²
NET FLOOR AREA:	5849 m²
GROSS FLOOR AREA:	6085m²

Ground Floor Plan

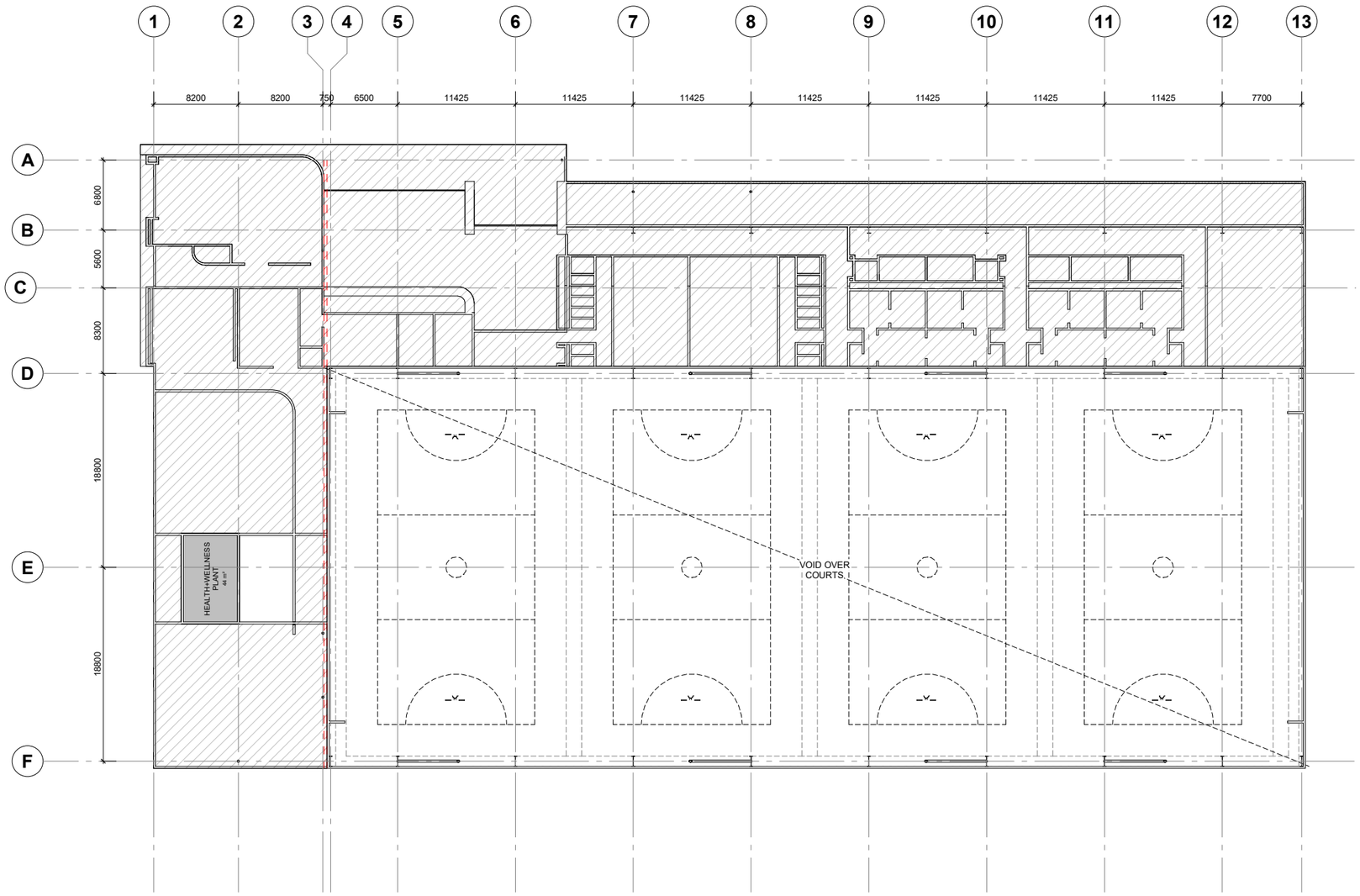


- ENTRY LOBBY / CAFE KIOSK
- RECEPTION & OFFICES
- CIRCULATION
- BATHROOMS & CHANGE ROOMS
- COURTS
- STORE
- MULTIFUNCTION
- HEALTH & WELLNESS
- PLANT

Note: Plant area to be validated.

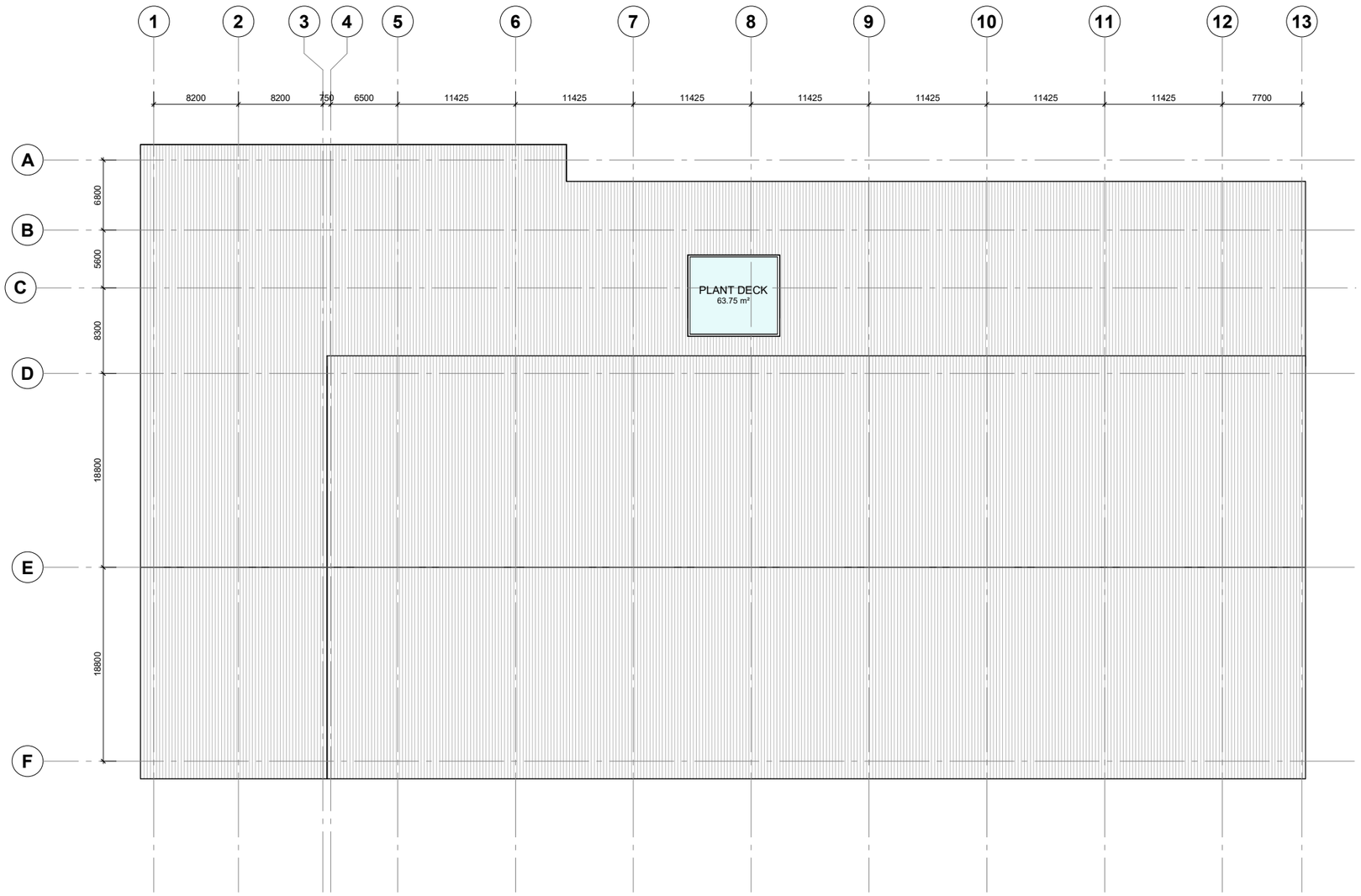
ROOM AREA SCHEDULE (NET)	
Occupancy	Area
PLANT	44 m²
	44 m²

Level 1 Floor Plan



Note: Plant Deck only - Allow for internal stair access from plant room below

Roof Plan



	Space	Element	Performance	Outline Specification	Briefed Area:	Designed Area:	Comments:
Indoor Courts	**Indoor Sports Courts**	4x Indoor Sports Courts	Regional / National Complaince	Clear height of 9m Wooden Sprung Floor, single batten, polyurethane finish, beech - loading for small utility vehicles/events equipment Acoustic treatment to Ceilings 2x full height and width acoustic curtains 3x auto-drop court dividers	3580	3554	
	Show Court	Events (in addition to Show Court)	*Assumed bumped in*	Provision for 1x show court (high level sports events/international 2000 seat capacity) Seating to be provided from separate budget.			Note: Not allowed for in Baseline Project
		Power + Lighting	Upgraded lighting for Show Court	Sufficient power/data connections for everyday use as well as hosting major events/shows/broadcast capabilities. Broad 3 Phase Capability/Floor boxes Cable ducting under floor for easy event set-up Lighting to suit a wide range of users specifically meeting high performance sport event users including Television Broadcast			
		Heating/Cooling/Ventilation Structural Acoustics	To meet show court requirements (Mechanical Venilation + Heating) Additional 20 tonnes (assumption) of secondary steel for supports Show court requirements (Base build allowance only)	Mechanical Ventilation including Tempered Air Additional uplift for events hanging etc. Achieve acceptable levels of noise within courts Separate adjacent spaces acoustically Zoned PA to manage occupants across facility			
		Fire	Hardware etc Assumed GFA impact to be tested	To allow for 2000px capacity event			
					3580	3554	
Storage	**Storage**	Sports Equipment Storage	Area to be validated	Concrete Flooring (seal coat only) External access through roller doors General allowance for storage racks for sports equipment, event storage etc.	100	201	
		Retractable Seating Storage	Assumed 1.2m pocket depth requirement (+/-1000 retractable seat storage)		100	90	
		Events Storage	*Assumed bumped in*		20	--	Spatial Allocation included in Sports Equipment Storage
		Community Group Storage	Area to be validated		80	--	QEC to validate how these spaces are to be divided up/managed
					300	291	
Ancillary Spaces	**Dressing Room/Umpires Rooms**	2x Umpires/Dressing Rooms		Carpet Tile, Acoustic panelling to walls, paint, ceiling tiles, Mirrors, Whiteboards Sink/Shower/Toilet Heat pump air conditioning or similar AV equipment + Screens	40	28	Dual use function of universal change/family rooms
	Tournament/Sports Control Room	Sports Control Room		Carpet Tile, Acoustic panelling to walls, paint, ceiling tiles Kitchenette Heat pump air conditioning or similar	40	--	Staff Meeting Room & Staff Kitchen dual use function as Tournament Control
	Change Room and Amenities	1x Male Toilet Block		Resilient vinyl flooring, Resco or similar toilet partitions within gendered bathrooms, ceiling tiles, shower trays, mirrors, whiteboards Robust/hardwearing sanitary fittings, Televisions, AV Public Bathrooms to be unisex (full-height acoustic partitions)	100	50	
		1x Male Change Room			100	50	
		1x Female Toilet Block			100	50	
		1x Female Change Room			100	50	
		2x Universal Accessible Change Rooms			--	--	
		Public toilets separated to change toilets			80	75	
		Service Area			20	--	
	First Aid Room/Drug Testing Area	First Aid Room		Resilient vinyl flooring, acoustic panelling, ceiling tile Toilet, sink and basin	12	13	
	Cleaners Cupboard	--		Resilient flooring, paint, ceiling tile Cleaners Sink Area included in above	--	9	
					592	325	
Entry/Foyer	**Entry Lobby**	Foyer	Area to be tested, dependant on court delivery	Polished Concrete Floor, Wall Panelling Acoustically separate to court areas AV/PA including Large AV screen for display Commercial Lift for access to Mezzanine if required	300	323	Includes Wind Lobby
		Reception	Small administration office/bathroom to be included (2px)	Reception Joinery Unit AV/PA	15	18	
		Merchandising		AV/PA	10	--	
		Toilets		Included in area above.	--	--	
		Offices		No current brief requirement	--	70	
		Sports Hub		No current brief requirement	--	--	
		Café		No current brief requirement	--	18	
					325	429	

7.2 Operational Brief Update

Area Schedule

	Space	Element	Performance	Outline Specification	Briefed Area:	Designed Area:	Comments:
Mulburpose Functn Rooms	Multi-purpose Function Rooms	Large Function Room	Area to be tested + Fitout to be tested	Carpet Tile, Acoustic Panelling, Ceiling Tile	75	139	Total area, divisable into two smaller meeting rooms with acoustic operable wall
		Small Meeting Room	Area to be tested + Fitout to be tested	Allow for Acoustic Operable wall to separate space Display Screens and Audio	50		
		Storage		Resilient vinyl flooring General allowance for storage racks	--	13	
	Public Toilets	Male and Female Toilets		Included in public toilets above	--	--	
	Facility Kitchen and Bar	Kitchen for basic food prep and heating	Functionality to be tested to meet re-heat requirement?	Small kitchen for basic food prep & heating Non-commercial Oven/Extraction/fridges/freezers Non-slip resilient flooring Sink/Dishwasher/Steriliser	25	--	Inlcuded in total area - allowance only for kitchenette (sink, hot water and milk fridge)
					150	152	
Health, Fitness and Wellness (New Build)	Cardio Area			No brief requirement	--	--	
	Wellness and Health & Fitness Lower Intensity Space			Resilient Flooring, acoustic panelling, ceiling tile, Mirrors Allow for Acoustic Operable wall to separate space in two Sound Proofing for room to exterior rooms Audio Visual Equipment	200	179	
	Health & Fitness Higher Intensity Space for Group Fitness			Resilient Flooring, acoustic panelling, ceiling tile, mirrors Allow for Acoustic Operable wall to separate space in two Sound Proofing for room to exterior rooms Audio Visual Equipment Fans	228	227	
	Health & Fitness Cycle Studio Space for Group Fitness			Resilient Flooring, acoustic panelling, ceiling tile, Mirrors Sound Proofing for room to exterior rooms Terraced timber flooring for visibility to instructor Audio Visual Equipment including large projector	100	89	
	Store for Wellness and Health & Fitness Classes Equipments			Resilient Flooring General allowance for storage racks	20	26	
	Wellness Therapy / Physio / Massage Rooms			Carpet tile, Acoustic panelling, Ceiling tile Acoustic separation between rooms	24	24	
	Change Rooms for Wellness, Health & Fitness Users			Resilient Flooring, ceiling tile, mirrors Robust/hardwearing sanitary fittings Shower Trays General AV including PA, TVs and Audio	120	70	
	Entrance and Office			No brief requirement	--	--	Planning allowance to achieve spatial adjacency to facility office/staff area
	Playtime Space			Resilient Flooring, acoustic panelling, ceiling tile Provision for sound and TV	25	--	Brief requriement to be confirmed by QEC, noting existing Health+Wellness currently facilitiates Playime space
	Cleaners Cupboard				--	4	
					692	619	
NET FLOOR AREA:					5639	5370	
	Circulation				335	352	
	Plant					170	Plant likely overstated but allowed for at this stage of design
	Wall Buildup					233	Allowance for wall thickness beyond net floor area
GROSS FLOOR AREA:					5974	6125	

7.3 Safety in Design Register

To be updated

7.4 Sub-consultant Design Reports/Design Memos

7.4.1 Structure & Civils
7.4.2 Services
7.4.3 H1
7.4.4 Acoustics
7.4.5 Traffic
7.4.6 Planning

7.4.1 Structure & Civils

STRUCTURAL & CIVIL ENGINEERING CONCEPT REPORT

QUEENSTOWN EVENTS CENTRE INDOOR COURTS AND CARPARK

QUEENSTOWN, JASMAX SOUTH

14.08.26

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kotahi ENGINEERING STUDIO

Project Number: S2003418

Queenstown Events Centre – New Indoor Courts and Carpark
Client: Jasmax South

kotahi ENGINEERING STUDIO

Prepared by
Kotahi Engineering Studio

Revision No.	Date	Prepared by	Reviewed by	Approved by	Description
A	14/08/2026	BL	DA	DA	Concept

Limitations of Report

Findings presented as part of this report are for the sole use of our client. The findings are not intended for use by other parties, and may not contain sufficient information for the purposes of other parties or other uses. Our professional services are performed using a degree of care and skill normally exercised, under similar circumstances, by reputable consultants practicing in this field at this time. No other warranty, expressed or implied, is made as to the professional advice presented in this report.

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Part A – Structural Engineering

1. Introduction

Kotahi has been engaged by Jasmax South Limited to provide structural and civil engineering design services for the new Queenstown Events Centre Indoor Courts and Carpark Project located in Frankton, Queenstown, New Zealand.

This section of the report documents the Structural aspects of the design that have been considered and worked through as part of the Concept Design phase of this project. It tracks assumptions, options considered, and recommendations for a preferred structural solution to carry forward to Preliminary Design.

1.1 PROJECT DESCRIPTION

The proposed development at the Queenstown Events Centre site involves the construction of a new standalone facility to the south-east of the existing Hockey Turf. The building will accommodate four indoor courts, health and fitness spaces, changing rooms, and a multipurpose event space designed to cater for a wide range of activities and functions. As a completely new structure, the facility will not be connected to the existing centre.

To support the anticipated increase in site traffic generated by the new development, a reconfiguration of the existing carparking is also proposed. The project will be sited on the current playing field, making efficient use of available land while delivering a significant uplift in recreational and community capacity for the Queenstown area.

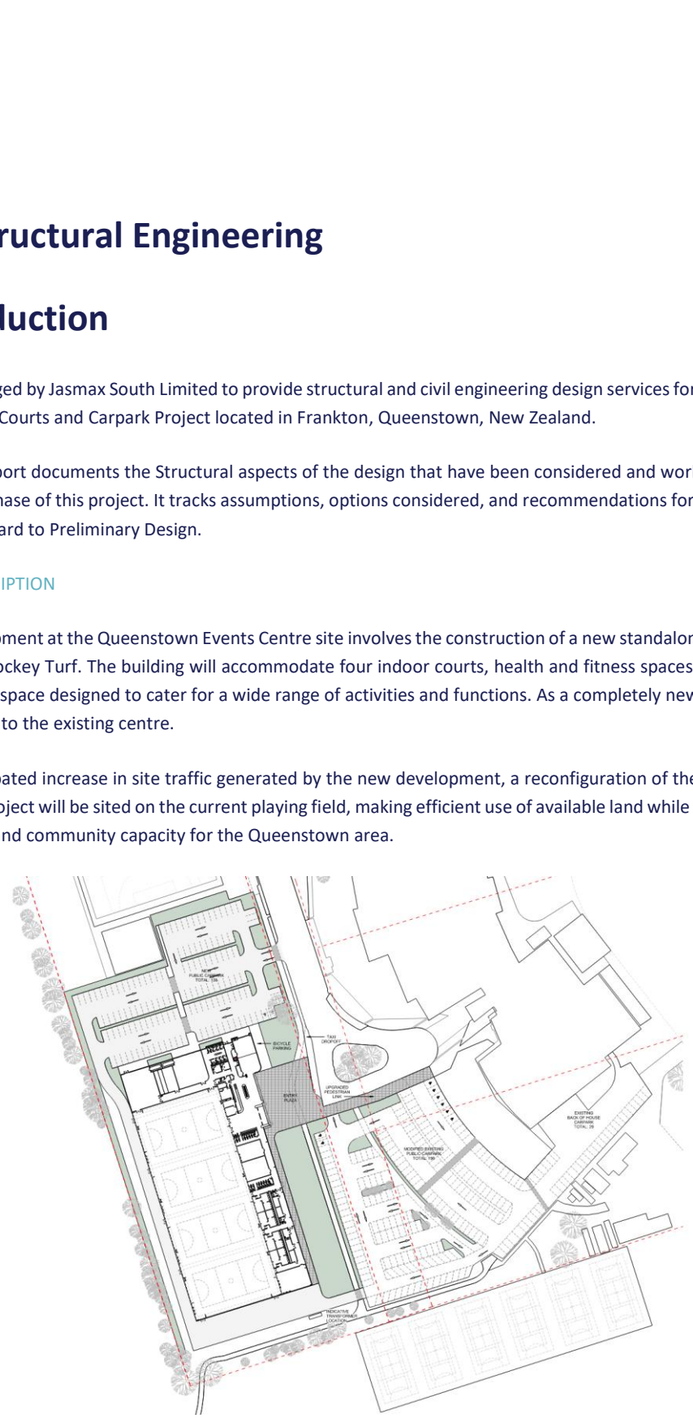


Figure 1 - Proposed site plan showing courts building to the bottom left, and the existing Events Centre to the right of image. Image courtesy of Jasmax.

1.2 REFERENCE DOCUMENTS

The following documents have been referenced in developing this concept design report:

- Jasmax Architectural Plans Dated 8 August 2026
- Engeo Geotechnical Report Dated 9 March 2026
- QLDC QEC Operational Brief Document

1.3 MEANS OF COMPLIANCE / DESIGN STANDARDS

Structure

The design of the structure for this building is to be in accordance with the New Zealand Building Code (NZBC), clause B1.

Specific reference is made to B1/VM1 and B1/VM4 for structure and foundations specifically. A list of the key design standards referenced in the design is included below, these standards relates to the current version of the standard unless noted otherwise:

- NZS1170 Structural Design Actions
- NZ3404 Steel Structures Standard
- NZS3101 Concrete Structures Standard

Based on the current recommendations there are no alternative solutions proposed.

Should Buckling Restrained Braces be selected for the lateral bracing system it will be considered as an alternative solution. Reference would be made to international design guidance and best practise documents to demonstrate compliance with NZBC. A Peer Review would also be required by an independent engineer.

1.4 PEER REVIEW

At this stage a peer review is not expected unless an alternative solution, such as BRBs selected for taking forward into future phases. We recommend a pre-application meeting with the Queenstown Lakes District Council (QLDC) is held during the Preliminary Design phase to confirm. It would be beneficial to the D&C tender process to being able to identify to tenderers if a peer review is required, to mitigate risk to the design and construct programme.

1.5 SAFETY IN DESIGN

Safety in Design (SiD) is a key requirement in the design of new buildings. We have been involved in an initial concept design SiD session with the design team, and QLDC. During this session key operational risks were discussed with the QEC operations team and recorded in a SiD Register by Jasmax.

The SiD register developed during this phase has been recorded by Jasmax and included in their concept design report. The key considerations of SiD to be considered in the structural design in the next phase are summarised below:

- Consideration of minimising temporary propping required for stability during construction
- Consideration of designing roof structure such that it can be installed in larger scale assemblies to reduce working at height requirements.

- Minimise requirements for ceiling diaphragms and if required can they be on top of the supporting structure rather than fixed to the underside of it. Alternatively, consider designing these out and horizontal bracing elements installed instead.

2. Site Description

2.1 LOCATION

The site is located at Joe O'Connell Drive and is accessed of SH6 in Frankton. The preferred building location is on a greenfield site to the west of the existing complex and to the south of the hockey turf. The building site currently consists of a playing field and is in a slight depression relative to the existing carpark and events centre buildings.

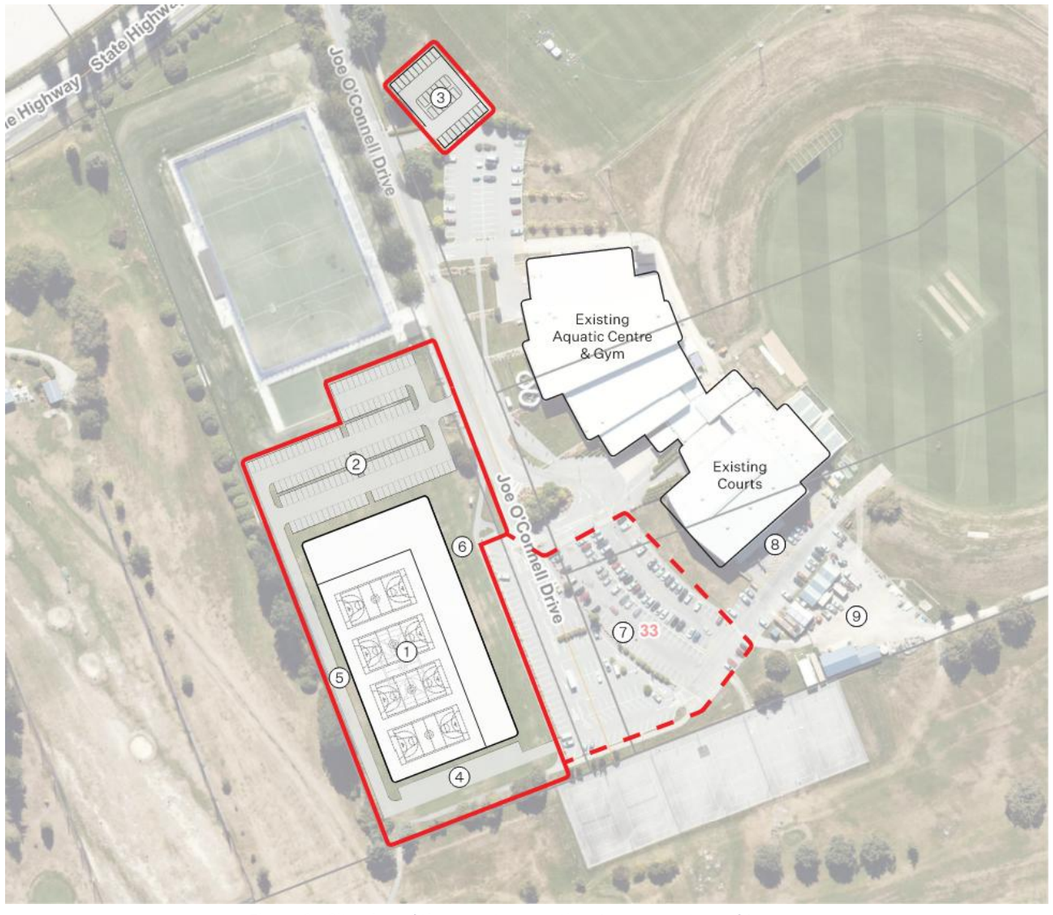


Figure 2 - Site plan of the one-storey option. Image courtesy of Jasmax.

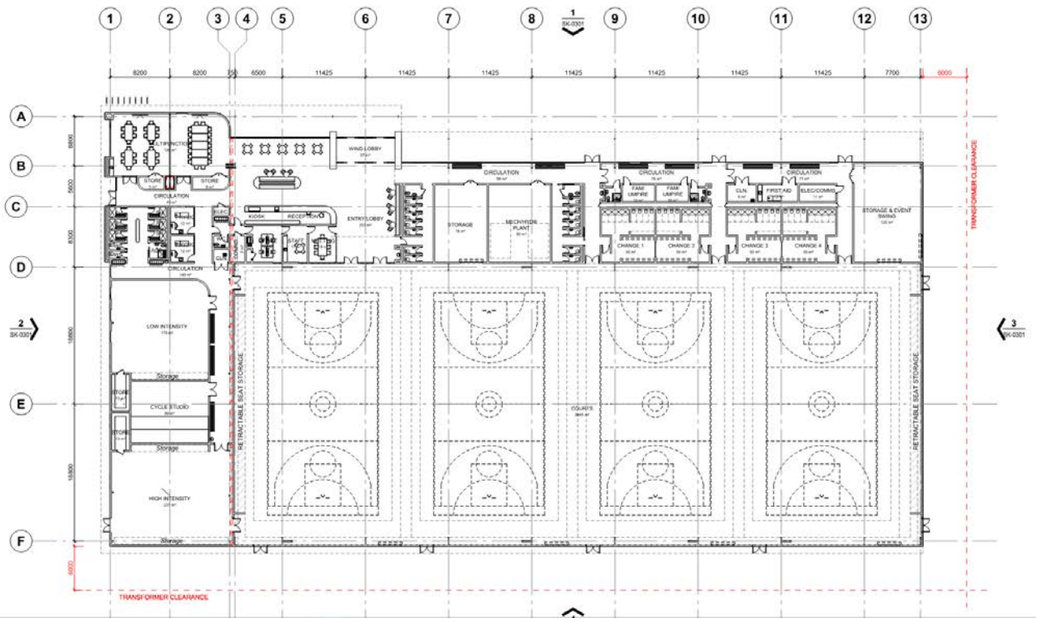


Figure 3 - Floor plan of the one-storey courts building

2.2 GEOTECHNICAL CONDITIONS

Engeo have completed a geotechnical assessment of the site and their findings are reported in their report *QEC Extension Geotechnical Interpretive Report* dated 09.03.2026. A summary of the ground conditions is provided below.

The site consists of approximately 0.4m of topsoil overlying soft to stiff silts and sands and transitioning to medium to dense sandy gravels from 2 to 3 m depth. Schist bedrock is encountered at depths greater than 60m and groundwater is estimated to be at 45 – 50m below ground level.

The soil is classified as Class D (Deep or Soft Soil) in accordance with NZS 1170.5:2004.

It is anticipated that shallow strip and pad foundations are suitable when founded on competent ground, by removing topsoil and uncontrolled fill. Ultimate bearing capacities in the range of 200-450kPa is expected.

2.3 FLIGHT PATH

The flight fan for Queenstown Airport (ZQN) is shown in Figure 4, at the southern end of the site the maximum height is 15m, with this rising to approximately 25m at the northern end of the site. A detailed overlay of this image has been requested from ZQN to feed into future planning studies for the new courts building. Based on initial discussions to date with the ECI contractor it is expected that a dispensation could be obtained from QAC to facilitate lifting of structural steel and roof components into place within the flight fan.

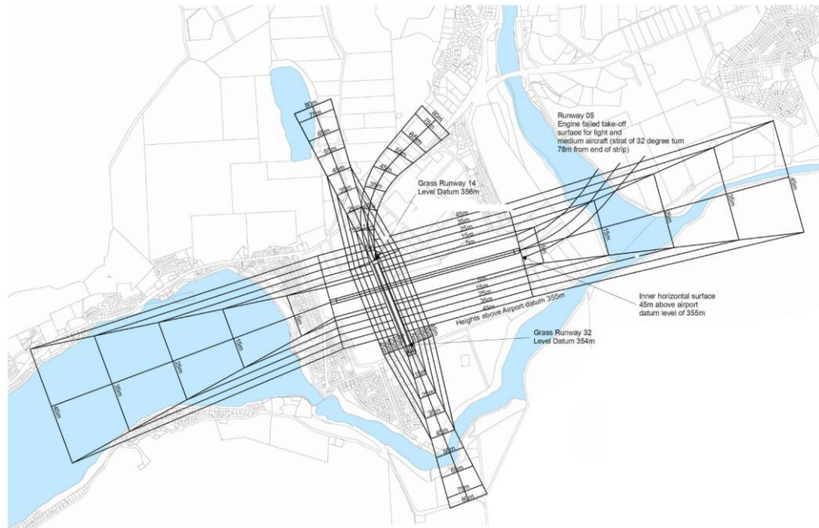


Figure 4 - Flight fan diagram showing height planes to work within for the Events Centre Project

3. Design Criteria

3.1 STRUCTURAL DESIGN CRITERIA

The structure Importance Level 3 (IL3) and 50-year design life, as defined by NZS1170, has been adopted for the structure. The structure achieves compliance with the Building Act through sections B1/VM1 & B1/VM4 of the New Zealand Building Code.

The design of new structure will be undertaken in accordance with what we consider 'current engineering best practice'. Specifically, as follows:

- Minimum level of Building Code compliance
- All relevant cited Standards (including amendments) within B1/VM1
- Draft updates to cited standards where more onerous, unless there is good engineering judgement as to why we would not, in which case we would revert back to the cited standards
- NZS1170.5:2014 Draft
- NZS3101:2006 Draft Amendment 3
- NZS3404:1997 Draft Amendment 2

We note that at the time of writing this report a new revision to the earthquake loading standard has been published, TS1170.5. This new standard captures the better understanding of seismic hazard throughout New Zealand obtained in the New National Seismic Hazard Model of 2022. The result is that seismic loads, and how they are determined has changed throughout New Zealand. In some locations throughout the country this change in load is significant.

At this point in time, the use of TS1170.5 is not cited in the NZBC B1, and the current NZS1170.5 is the means of compliance with the building code. Depending on the time frame for completion of the design of the events centre, when consent is submitted TS1170.5 may be the cited standard. At this point in time there is no clear direction from MBIE on when TS1170.5 will be cited, and as such the current cited standard has been used for design.

For comparison purposes we have prepared the graph in Figure 5 Overview of NZS1170.5 accelerations versus an assumed value to TS1170.5. This compares the NZS1170.5 accelerations at the site versus an assumed value to TS1170.5. As can be seen from the graph there is minimal difference for this site between the two standards. It is noted that the TS1170.5 value uses an assumed Vs(30) value, which would need to be confirmed by geotechnical testing.

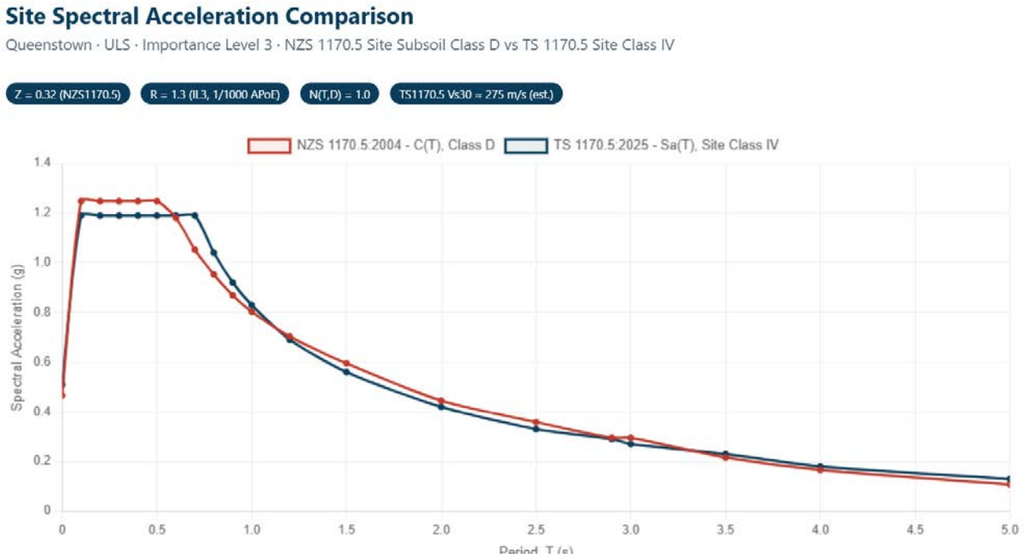


Figure 5 Overview of NZS1170.5 accelerations versus an assumed value to TS1170.5

3.2 DURABILITY CONSIDERATIONS

The building will be designed as having a 50-year design life with durability expected to be achieved based on acceptable solutions cited by NZBC Clause B2.

3.3 PROJECT BRIEF VS TECHNICAL UPLIFT

As the concept design phase has been worked through it has become clear that there is a budget gap between the briefed requirements and the budget. The design team led by Jasmax has worked through setting a baseline concept design which achieves the majority of the briefed requirements but is descoped slightly to remain on budget. The project then considers a technical uplift to the clients briefed requirements for a fully events capable facility. This change is shown in Figure 6.



Figure 6 - Concept design scope showing the baseline project versus the uplift beyond baseline to meet the client scope

While there is a step change in some other disciplines scope of work for the uplift case the effect on structure for a fully events capable structure is minor. There is no change in the importance level, so lateral loads remain the same. As such our concept design developed to date generally covers the requirements of a fully events capable facility due. The key impacts on the structure for the technical uplift is outlined at a high level below:

- Passively ventilated baseline project may require additional secondary steel to support openings in the façade
- Additional rigging secondary steel may be required for AV and lighting equipment
- Potential for higher acoustic performance for technical uplift (noting our current design allowance should cover the requirements for the uplift case – TBC in next stage)
- Increase in seismic restraints for a fully mechanically ventilated option

Should the show court mode not be required, the option of running central gravity posts could be investigated to reduce the span of the portal frame rafter, increasing the efficiency of structure.

4. Loading

Loading for the structure is derived in accordance with NZS1170 for an IL3 building and considering specific equipment, rigging loads and provision for future flush solar panels.

Table 1 outlines the loads considered for the concept design phase.

Table 1 - Load Summary

Load Type	Description	Value	Reference/Notes
General (Part 0:2002)	Location	Timaru	
	Building importance level	3	Table 3.1
	Design Life	50 Years	
Dead	Roof	0.2 kPa	Future flush solar
	Roof	0.5 kPa	Cladding buildup including acoustic treatment
	SDL	0.2 kPa	
	Walls	0.5kPa	Typical
		3.6 kPa	150mm Panel up to 3m
Live (Part 1:2002)	Roof	0.25 kPa	Table 3.2
	Floor (courts)	3.0 kPa	
Wind (Part 2:2021)	Basic Pressure (multiply by C_{shp})	0.92 kPa (ULS) 0.67 kPa (SLS)	"High" Wind Zone
Snow (Part 3:2003)	Design Snow Load	1.1 kPa (ULS) 0.6 kPa (SLS)	Region N5, sub-alpine
Earthquake (Part 5:2002)	**Ultimate Limit State:**		
	Assumed fundamental period (Stadium)	0.7sec(Across)	Steel portals
	Assumed fundamental period (link)	0.4 sec (Along)	Tension/CompressionCBFs
	Soil Class	D	cl 3.1.6
	Seismic hazard factor	0.32	Table 3.3

	Near fault factor, N(T,D)	1.0

4.1 RIGGING AND SECONDARY LOADS

It is expected that rigging for lighting, curtains and basketball hoops will form part of the final design. Specific calculations have not been undertaken for these at this point – but will be considered in future stages.

5. Structural Options Study

The structural options considered have been consistent with what is traditionally expected for multipurpose sports and events facilities while considering some alternative approaches. These options are discussed in the following sections, and a recommendation provided.

5.1 DESIGN CONSTRAINTS

An initial consideration of design constraints was reviewed to inform the possible structural systems, the key constraints are identified below:

- 4 Court Arrangement with central show court (in either orientation, longitudinal or transverse)
- Height limit of 15m to 25m (South end of site to North end of site) to suit Queenstown Airport Recession Planes
- 9m knee height
- Attached health and fitness, entry and changing room spaces
- Mechanically ventilated solution, so structure needs to facilitate reticulation of mechanical services
- Allowance for future installed flush solar panels
- Consider a base case of a cladding build up to 50kg/m2 in the main court area for acoustic and thermal performance

5.2 FOUNDATIONS

As discussed previously in this report the ground conditions are good at the proposed site. Following the removal of existing top soil and backfilling to the required levels bearing capacities in the order of 250kPa to 300kPa are expected to be achieved.

It is therefore expected that the most efficient foundation solution will shallow pad footings at each portal location with perimeter reinforced concrete ground beams, and a reinforced concrete slab on grade with joints to accommodate concrete shrinkage and tolerance.

An alternative to shallow footings would be isolated piles at the main grid locations, with a grillage of ground beams. This option could allow for the reduction in the size of the perimeter ground beams as uplift can be taken through the piles. However, this adds additional complexity to the foundation solution, and since the ground is expected to be good this is not considered the preferred solution.

5.3 MAIN COURT SUPERSTRUCTURE

Key Assessment Criteria

- Value for money
- Internal flexibility of multiuse space
- Structural efficiency
- Fire and Acoustic Performance

The following images outline the options considered for the main court superstructure hall. A base case was considered which consists of a welded tapered steel section portal frame, as this was initially considered best to fit the use of the space. Qualitative comparisons are given for each of the options relative to the base case.

Option 1: Base Case Welded Steel Portal Frame Gable Form

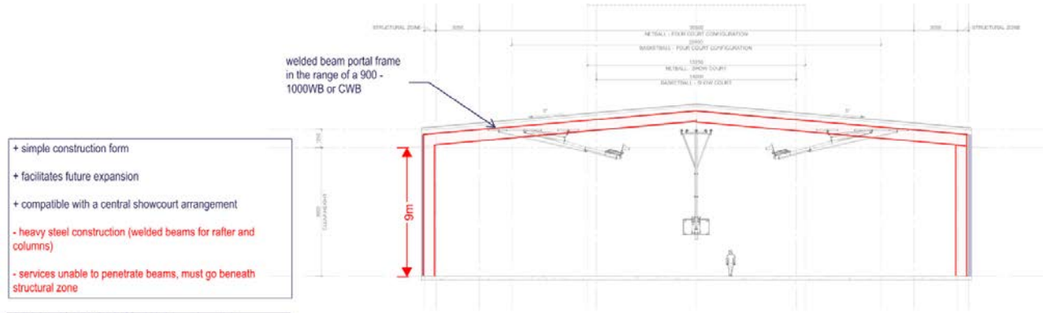


Figure 7 - Overview of the base case considered and the pros and cons

Option 2: Welded Beam Portal Frame Gable with Central Gravity Post and Transfer Beam

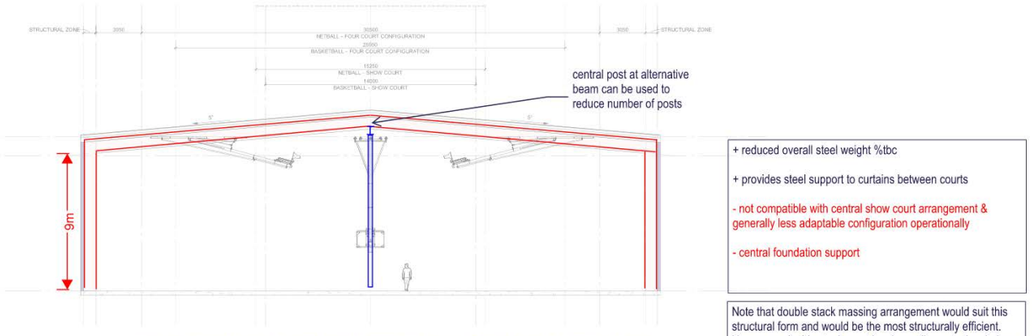


Figure 8 - overview of option 2 which is similar to option 1 but with a central gravity post and transfer spine beam

Option 3: Welded Steel Truss Gable Form

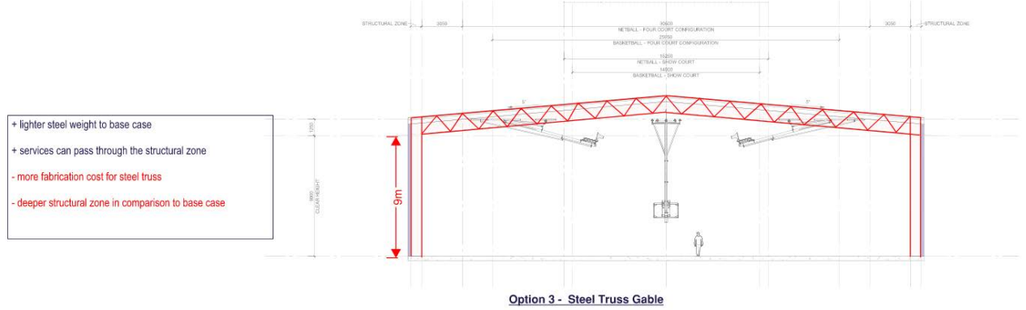


Figure 9 - Overview of Option 3 which consists of a welded steel truss in a gable form

Option 4: Welded Steel Truss Monopitch

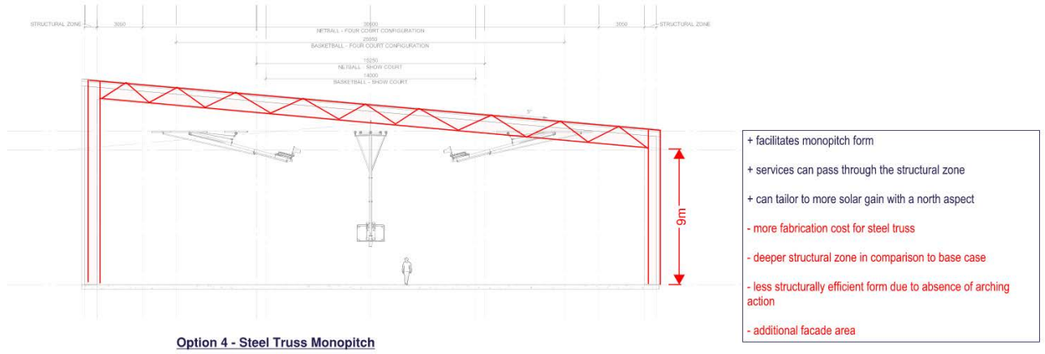


Figure 10 - Overview of Option 4 which consists of a welded steel truss in a monopitch form

Option 5: Steel tension cable truss with precast or steel wing walls

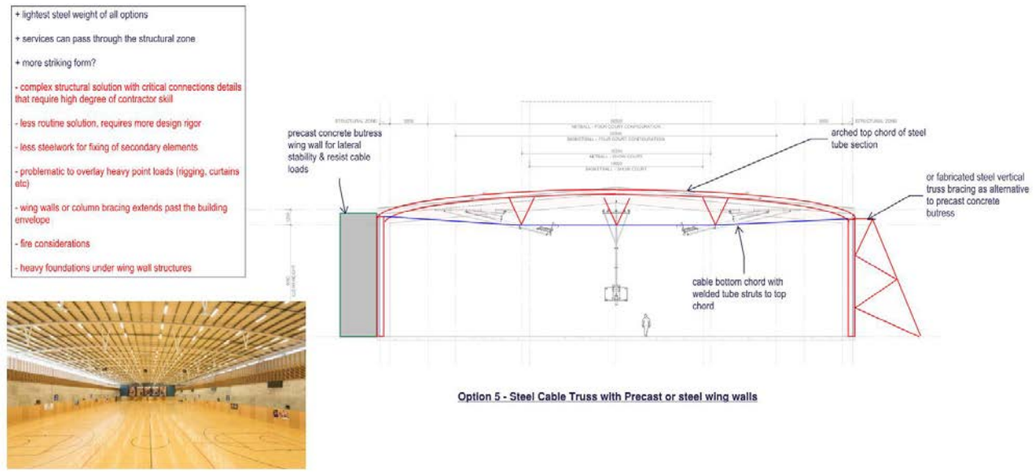


Figure 11 - Overview of option 5 which consists of a steel tension cable truss with precast or steel truss wing walls

Option 6: Steel tension cable truss with precast or steel wing walls

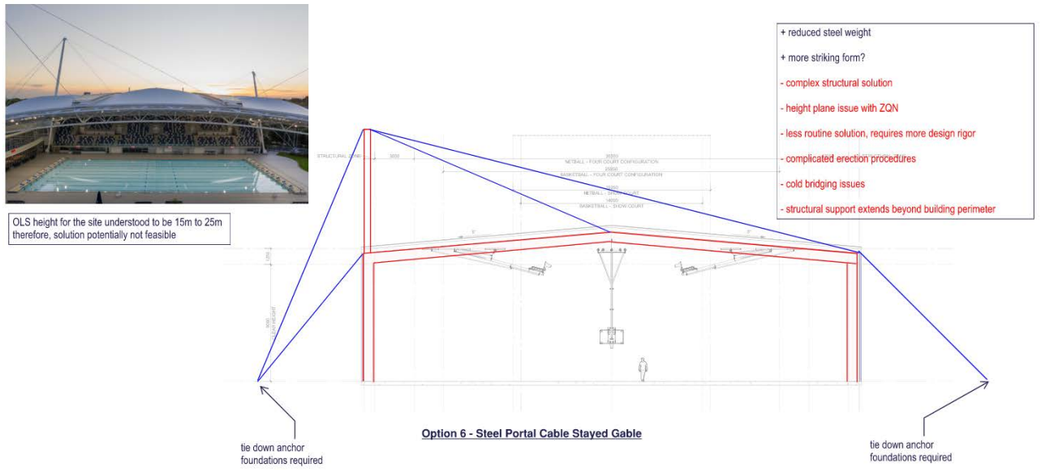


Figure 12 - Overview of option 6 which consists of a cable stayed roof structure

5.4 MAIN COURT SUPERSTRUCTURE WITH ONE OR TWO STOREY LEAN TO

Following the options assessment for the main hall structure, options to support the lean-to structure were investigated and presented to the design team. This included consideration of either a one storey or two storey health and wellness / changing room space. Options for the structural solutions for these elements are described in the following sections:

Key Assessment Criteria

- Value for money
- Internal flexibility of multiuse space
- Structural efficiency
- Fire and Acoustic Performance

Options Analysis

Option 1: One Storey Lean To

As a base case a 1 storey lean two structure was investigated, this included extending a rafter 13m over the adjacent spaces with a pin connection to the portal frame column. A central post in the ancillary structure is included to reduce the demands on the roof rafter which will be deflection critical due to its support of suspended ceilings.

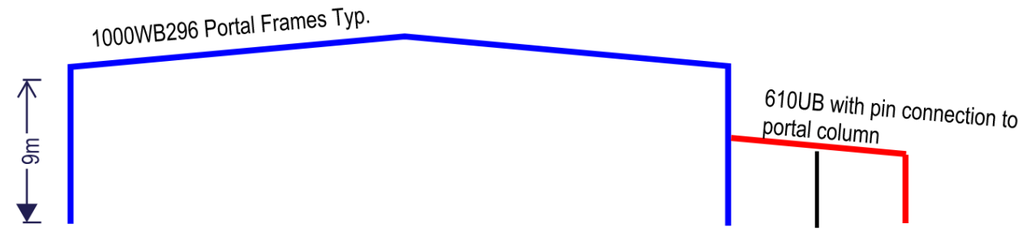


Figure 13 - Overview of the proposed support of the single storey health and wellness space

With a single storey health and wellness space the steel frame weights are generally reduced, however the building footprint extends over a greater area which results in increased number of frames and the associated fabrication considerations. The building footprint also takes up a larger area of the site which reduces areas for carparking and reduces future flexibility.

Option 2: Two Storey Lean To

As an alternative to a single storey health and wellness space a two storey lean to structure is considered. With this solution fitness areas are positioned on the first floor, with plant, equipment and changing facilities on the ground floor. With this solution the structural moment frame cant be extended over the two storey structure, which adds some efficiency to the structure. A suspended comflor slab is provided to level 1. Posts extend full height to support the roof.

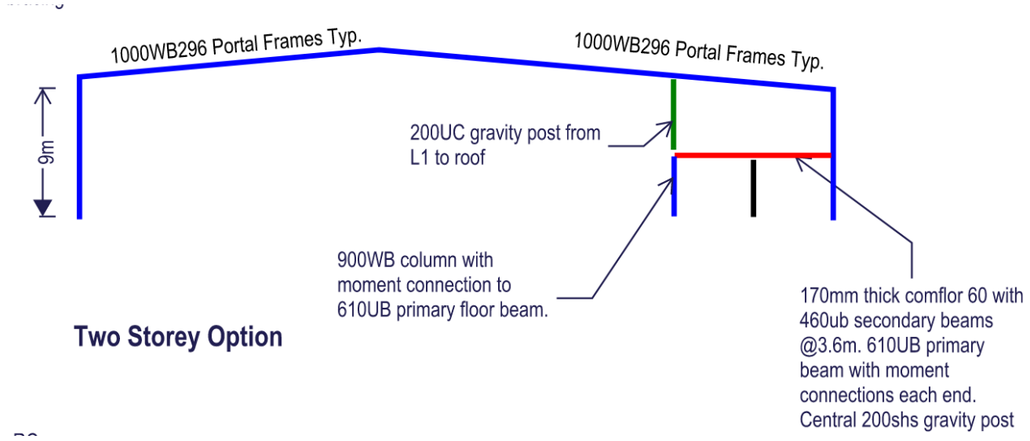


Figure 14 - Overview of the two-storey lean to structure option

With this option the overall building floor plan dimensions are reduced which facilitates a smaller area of the site taken up, freeing up more room for carparking. The structure itself is generally heavier per gridline, however since the building takes up a smaller footprint the overall level of fabrication reduces as well as the extent of foundation and subgrade preparation works. This option does introduce additional working at height, and additional trades such as the installation of steel composite metal deck.

5.5 STRUCTURAL GRID STUDY

During the concept design phase options for structural grid spacings was investigated with the design team.

As a starting point a 8.4m grid was considered as a base case. This was selected as a starting point as it provides a suitable wide grid to minimise the number of frames and connections, as well as suits the placement of 1.2m wide infill modules for wall framing in between the primary grids.

An 8.4m grid while efficient does not work in well with the indoor court layout, as it results in columns landing unevenly on each court. This results in access to the courts being blocked, and different secondary steel support layouts required for each grid to support curtains, and hoops etc. The 8.4m grid option and the associated secondary structure is shown in Figure 15.

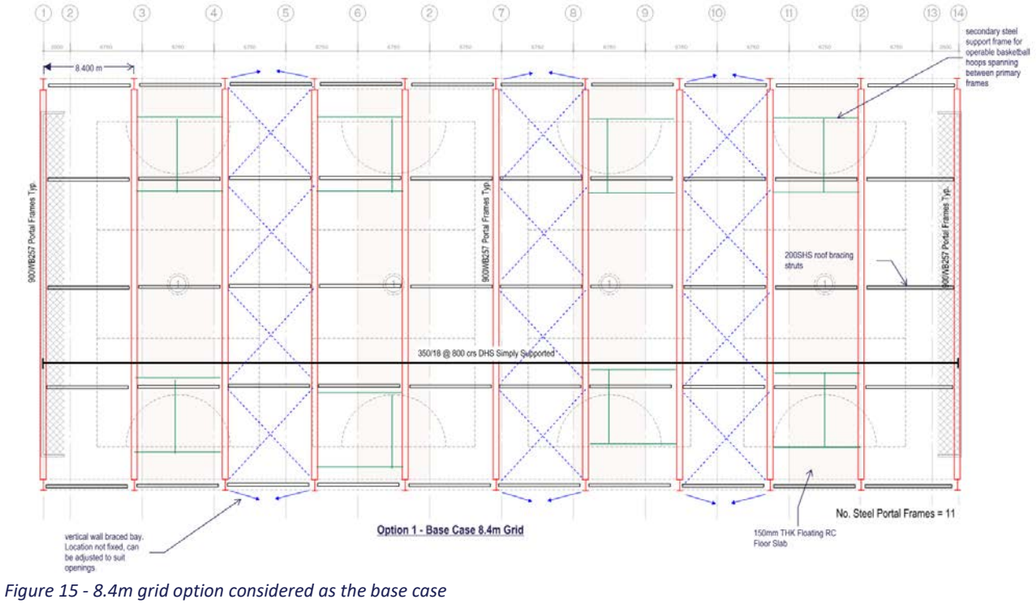


Figure 15 - 8.4m grid option considered as the base case

To better reflect the court layouts while maintaining a large span an option for 11.4m grids has been considered. In this option portals are positioned equally either side of the court side lines. This allows for a consistent drop in secondary structure for hoops over each court, and additional secondary steel can be run at mid gridlines to support court dividing curtains.

This option is considered essentially the maximum practical grid spacing, as any wider and longitudinal structural members will need to be spliced together purlin weights become excessive. However, by pushing the grid spacing the level of fabrication of individual steel components reduces, and through discussions with the ECI contractor we understand these frame sizes are within the limits of the local markets capacity to lift. This grid study option is detailed in Figure 16.

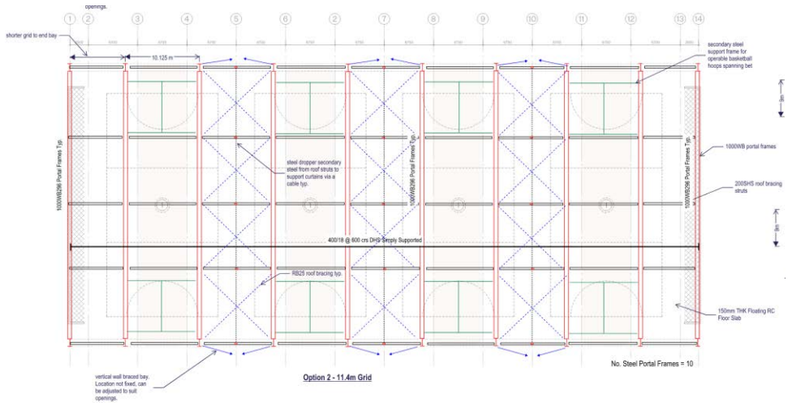


Figure 16 - Overview of the 11.4m grid option

As a further grid option a short grid of 6.75m was tested. This also works well from a reduction of secondary steel perspective as a primary grid line is positioned either side of the court midline as well as between each court. This means that hoops are easily supported and dividing curtains can run on the underside of the main portals. This option however results in additional portal frame bays, increasing the number of connections, fabrication and foundation work. As a result this option was not investigated further as it was deemed to be less cost effective.

5.6 PURLIN STUDY

A key input to understanding grid optimisation is the purlins and girts which support the buildings cladding. A purlin study was carried out to determine purlin spacings for a range of grid sizes centered around the use of cold formed steel purlins. Cold formed steel purlins were chosen over timber purlins due to the large spans associated with the grid lengths considered mean timber purlins were an uneconomical option.

The purlin study of cold formed steel purlins is outlined in Table 2. This shows purlin sizes for various single span, dimension and spacings. Optimal single purlin layouts are highlighted green for each grid spacing length.

Table 2 – Purlin study shown the centre by centre spacing of various purlin depth and gridlines.

	Purlin Size			
Grid Spacing (m)	250/18	300/18	350/18	400/18
6.75	600	1200	1200	-
8.4	400	600	800	1200
10.125	-	400	600	800
11.4	-	-	-	600

The option of reducing purlin section weights by lapping purlins at supports was investigated, however the ECI Contractor noted that this approach has additional construction costs and is not preferred.

5.7 RECOMMENDATION TO CARRY FORWARD TO PRELIMINARY DESIGN

The above options have been evaluated against the key project performance criteria and discussed with the design team to understand the implications of each option on the respective disciplines, as well as cost, and constructability.

Following the above consultation and evaluation the preferred structural solution to be carried forward to preliminary design is ***A Welded Steel Beam Gable Portal Frame with a Single Storey Lean to Structure at a grid spacing of 11.4m***. This solution was adopted as it provides an efficient structure, which minimises the fabrication of structural steel and works well with the court arrangements. Welded steel beams have reduced fabrication requirements than a welded steel truss, and can be economically procured from both in NZ and offshore. A wide grid span means reduced foundation works, and a single storey lean to is easy to construct.

For a full overview of the preferred option to carry to preliminary design refer to the Appendix.

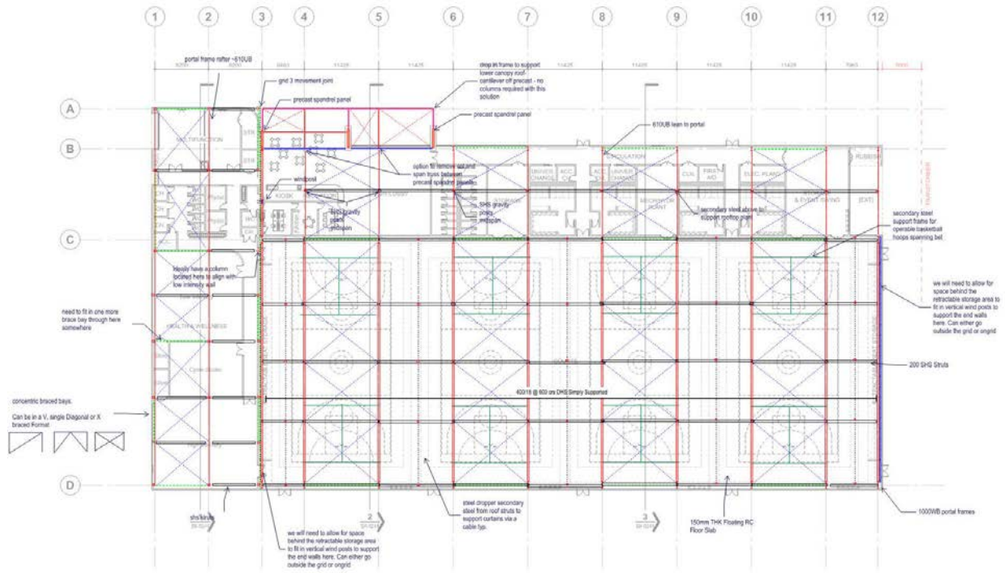


Figure 17 - General Overview of the preferred solution

The key aspects of the preferred solution are described below:

- 1000WB portal frames are provided through the court area. 200SHS struts with RB25 reidbraces form the roof bracing system. Wind posts are required to each gable end to restrain the cladding for external wind pressures as well as support the retractable seating in its closed position.
- The lean to structure consist of a post and beam arrangement of 610UB rafters with 150SHS posts. This structure is braced with steel bracing members to provide lateral resistance.

- Due to the length of the building and the change in structural system for the health and wellness space a seismic joint has been introduced on grid 3. This allows for differential movement between the health and wellness space and the main hall area. This joint is supported by separate columns either side of grid 3 and allows for movement in both horizontal directions
- Options have been investigated for the lateral bracing. At this point in time tension and compression steel bracing is considered as the preferred option. This provides a rigid, elastic bracing solution which is easy to construct and can be orientated to coordinate with the architecture. Should a higher degree of seismic performance above building code levels be desired by the client consideration of Buckling Restrained Braces, or Braces with Dampers could be considered. This would add some complexity to the structural solution, add additional lead times for materials and would be considered a an alternative solution requiring peer review. The solution provided with rigid tension / compression bracing meets the building code requirements and provides suitable robustness for a IL3 building.
- The entrance canopy is supported by a series of steel posts spanning from the lean to structure.

6. Fire Design

Based on the advice received to date from the Fire Engineer (Stantec) the proposed location of the building and its minimum offset of 6m to the new proposed transformer means that the external walls of the structure are not required to form a fire separation.

It is expected that throughout the building there will be fire rated walls to separate fire cells. These walls will likely require passive fire protection to any steelwork that supports these separations. This could be in the form of fire rated plasterboard or intumescent paint. Alternatively heavier partition construction such as blockwork could be considered, and likely may be desired for changing room spaces for other reasons. This will be documented by the architect, but to be coordinated with the design team in future phases.

At this stage of design we are not expecting that the vertical members supporting the roof will be required to be fire rated, and as such these will not require intumescent paint or similar. This is to be confirmed with the fire engineer in the second stage. Should a two storey option be taken forward, intumescent paint will likely be required for the columns and beams supporting the suspended floor.

7. Other Design Considerations

7.1 ACOUSTICS

Depending on the level of acoustic performance selected by the client to be carried forward into future stages the cladding buildup weight may be subject to change. At this point in time a 50kg/m2 allowance for the cladding build-up has been considered – this is expected to be sufficient and will be refined in the next stages as produce selection and acoustic performance is confirmed.

The key result of this is that purlin sizing may change, and the primary structure sizes may be able to be refined slightly.

7.2 THERMAL PERFORMANCE

Stantec have produced a H1 performance memorandum as part of the concept design deliverable. Based on this analysis it is understood that generally underslab insulation is not required to meet H1 requirements. However, as a base case it is recommended that under the Health and Fitness Centre and changing room spaces underslab insulation is provided to achieve a more efficient thermal performance and reduced in life energy costs.

7.3 CONSTRUCTION AND SUPPLY CHAIN CONSIDERATIONS

The proposed solution utilises large welded steel beams. Based on our discussions with the ECI contractor we understand that these can be procured from NZ Suppliers or offshore from Indonesia. If these are procured offshore cost savings of approximately 30% can be realised over local sources, this does however have a minimum 3-4 month lead time, and shipping means section lengths need to be limited to 12m to suit 40ft container sizes. A minimum order quantity of 50t usually applies.

The site is a tight area and construction deliveries will need to be tightly managed, and lay down areas managed. With the large steel beams expected to be sourced from offshore, the 12m lengths will be readily able to be transported to site. During future phases to assists with construction consideration will be given to designing the primary structure such that large sections can be assembled on the ground and craned into place to minimise working at height.

8. Concept Stage Costing Considerations

The content presented in this report and detailed in the concept sketches in the Appendix represent a concept level in nature. Not all information is shown on these drawings, the following clarifications are made to assist in pricing at this stage:

- Steel sizes for the main courts area have been shown on a section depth basis only. A suitable allowance for structural steel weight should be made
- The main lean-to structure has been shown indicatively with column and brace sizes not explicitly provided at this stage. Due allowance should be made for these elements
- Typical purlins and girt spacings have been shown on the drawings, allowance for connections and fastbraces should be made
- In general secondary structure has not been shown on the drawings except indicatively. The QS shall allow for secondary structure above and beyond what is shown on the drawings
- The plant platform over the lean-to roof and the stair access to such has yet to be addressed.
- The QS should allow for specialist floor finishes, underfloor heating, and underslab insulation as required by the architect
- Allowance for design contingency shall be included commensurate with the design information being at Concept level of development.
- Allowance should be made for escalation and project contingency based on industry best practice
- Seismic restraint of services, partitions and ceilings is not shown on the plans, this should be allowed for
- External structures such as ramps, and pavements is documented by others

9. Key Considerations for Preliminary Design

The following key elements are listed as a starting point for discussions in the next phase:

- Confirm fire requirements for primary structure
- Confirm acoustic engineering performance requirements and cladding buildup weights
- Confirm plant roof top platform requirements
- Confirm extent of any precast cladding and internal block-work walls
- Confirm foundation design parameters with the geotechnical engineer
- Confirm whether the Base Case Design or the + design is to be adopted

Part B – Civil Engineering

10. Introduction

10.1 SCOPE

The civil scope covers the Concept Design stage earthworks, proposed external levels, roading and access, stormwater management and disposal, potable water supply, wastewater drainage, and associated site infrastructure required to support the proposed development. The Civil concept design also identifies existing infrastructure constraints, proposed servicing options, and matters requiring confirmation or further investigation during detailed design.

It has been identified that areas of the existing carpark are sometimes susceptible to flooding. This has been investigated in during the concept phase, although the scope of this remedial works did not form part of the project brief.

10.2 REFERENCE DOCUMENTS

The following documents have been referenced in developing this concept design report:

- Jasmax architectural drawings and design information
- ENGEO Geotechnical Interpretive Report
- Patterson Topographical Survey
- SAIL Automatic Fire Sprinkler System Inspection Report No. 8654, dated 15 June 2026
- Existing services information and mark-ups
- HIRDS (High Intensity Rainfall Design System) - Rainfall intensity data RCP8.5 (2081–2100)
- Project operational brief

10.3 MEANS OF COMPLIANCE / DESIGN STANDARDS

The civil design has been developed in accordance with the current applicable versions of the following standards, codes and guidelines, unless specifically noted otherwise:

- New Zealand Building Code (NZBC) — including Clauses E1, G12 and G13.
- QLDC Land Development and Subdivision Code of Practice (LDSCP) and NZS 4404 — Land Development and Subdivision Infrastructure.
- QLDC District Plan and applicable parking, access and traffic standards.
- Stormwater and soakage requirements, including relevant QLDC requirements, HIRDS rainfall data, and site-specific infiltration testing.
- Water supply design requirements, including applicable QLDC water supply standards and AS/NZS 3500.
- Backflow prevention requirements, including AS/NZS 2845.1 and applicable QLDC requirements.
- Wastewater design requirements, including AS/NZS 3500 and applicable QLDC wastewater standards.
- Relevant fire-fighting water supply and fire protection requirements, including NZS 4541 where applicable.

The design will be subject to confirmation of the applicable QLDC requirements and consent approval by the relevant authorities during detailed design.

Unless specifically stated otherwise, references to standards, codes and guidelines within this report refer to the current applicable version at the time of design.

10.4 PEER REVIEW

At this stage a peer review is not expected for Civil design.

10.5 SAFETY IN DESIGN

Safety in Design (SiD) is a key requirement in the design of new buildings. Safety in Design considerations have been incorporated into the concept civil design to identify and minimise risks associated with the construction, operation and maintenance of the proposed development. The key civil-related risks and controls are summarised below.

Key Construction Risks — Contractor

- Site access and public safety: Maintain safe separation between construction activities, QEC users and the public, including appropriate fencing and exclusion zones, maintain unobstructed access for fire and emergency vehicles throughout construction.
- Earthworks and excavations: Provide safe and stable temporary cuts, excavations and working platforms in accordance with geotechnical recommendations.
- Existing services: Confirm and protect existing underground services prior to excavation.
- Erosion and sediment control: Implement and maintain appropriate controls during earthworks to prevent sediment discharge to adjacent areas and waterways.

Key Operational and Maintenance Risks — Client/Operator

- Winter slip hazards: Address ice and snow risks on ramps, pedestrian areas and the proposed cycleway through appropriate grades, surface treatments and drainage.
- Pedestrian and cyclist safety: Provide clear separation between pedestrians, cyclists and vehicle movements within the car park and access areas.
- Fire and emergency access: Maintain clear emergency vehicle access around the building and through the site.
- Stormwater maintenance: Provide safe and accessible maintenance and cleanout access to soakpits and stormwater quality treatment devices.
- CPTED and night-time safety: Provide appropriate lighting, sightlines and safe pedestrian routes between parking areas and building entrances.
- Playing field interface: Consider suitable barriers or separation to minimise risks from hockey balls entering vehicle and pedestrian areas.
- Landscaping and trees: Assess existing trees and proposed landscaping for maintenance, wind-throw, fire and vehicle-related risks.

The civil design will incorporate measures to eliminate or reduce risks where reasonably practicable, with residual risks identified for management by the Contractor or Client/Operator as applicable. These risks are to be reviewed and closed out during detailed design, construction planning and commissioning.

ENGEO has confirmed that the development is not expected to exacerbate erosion, falling debris, subsidence or inundation hazards, provided the recommendations of the geotechnical report are implemented.

11. Site Description

11.1 LOCATION

Refer to the structural section of this report for the site description.

11.2 GEOTECHNICAL CONDITIONS

A geotechnical investigation was undertaken by ENGEO Ltd in November 2025, the following were the findings and recommendations :

- **Ground Conditions** : The site generally comprises 0.3–0.4 m of topsoil and/or uncontrolled fill overlying alluvial silts and silty sands, with denser sandy gravels encountered at approximately 1.9–3.4 m below ground level. No groundwater seepage was observed during investigations, and groundwater is anticipated to be well below the site and not a constraint to the proposed works.
- **Pavement Subgrade :** A design CBR of 4% is recommended based on DCP testing, subject to removal of topsoil and unsuitable fill and adequate subgrade compaction. The adopted CBR is to be verified by site-specific DCP testing within the roadways during construction.
- **Stormwater Infiltration:** Site infiltration testing indicates unfactored infiltration rates of 68–460 L/hr/m², with the highest rates recorded within the underlying coarse-grained alluvium. Soakage into this alluvium is considered permissible under Clause 4.3.7.12.12 of the draft QLDC LDSCP 2024, which requires a rate exceeding 25 L/hr/m². Soakage devices should extend at least 1.0 m into the alluvium, with site-specific testing at final locations to confirm design infiltration rates during detailed design.
- We note that in our review of the storm water drainage for the existing pavements that soakage rates across some parts of the site are highly variable. Additional soakage testing will be required in some areas where new/upgraded soakage pits are to be located away from areas that have been tested for soakage rates.

11.3 EXISITING SITE FUNCTIONALITY

- **Vehicle Access and Parking**
  The existing QEC complex is accessed from Joe O'Connell Drive, serving the events centre, aquatic complex, gymnasium, outdoor courts and existing car parks. The proposed development will provide new parking, internal circulation and a dedicated service and maintenance lane around the rear of the building.

- **Existing Services**
  Existing services serving the existing facilities include water supply, wastewater, stormwater, electrical, telecommunications and irrigation infrastructure. Service locations, levels and capacities are to be confirmed through DBYD (Dial Before You Dig) investigation, potholing and consultation with relevant utility providers. The Aurora Energy HV cable crossing the northern site is a key constraint.

- **Existing Stormwater and Overland Flow**
  The existing car park experiences localised flooding and ponding through problems with the existing soakage capacity. The proposed works will include stormwater remediation, soakage and maintaining existing/designated overland flow paths to manage runoff and exceedance events.

- **Existing Water and Wastewater**
  The existing wastewater connection to the public network is located approximately 195m east of the proposed site at the southern boundary from the proposed building connecting point.

  The existing water network includes a 150 mm Principal Supply Main and adjacent 200 mm Trunk Main. The proposed building will be serviced by a 100 mm water supply extension via an RPZ, subject to confirmation of network capacity by QLDC.

- **Fire-Fighting Water Supply**
  The existing fire sprinkler system has a documented water supply deficiency, with a Fire System Impairment Notice issued. The existing network is not to be relied upon as the sole fire-fighting water source for the proposed building until capacity is confirmed by QLDC.

- **Airport Height Restrictions**
  Due to the site's proximity to Queenstown Airport, applicable flight path and OLS height restrictions are to be confirmed and incorporated into the final building design.

12. Design Criteria

The civil infrastructure concept design has been prepared in accordance with the applicable New Zealand Building Code, QLDC requirements, relevant New Zealand Standards and project-specific design information. Unless noted otherwise, the current applicable version of each standard has been adopted.

12.1 STORMWATER

12.1.1 Existing Network and Design Approach

QLDC GIS records identify stormwater infrastructure within the wider site area; however, no existing reticulated stormwater network directly services the proposed development area. The nearest significant mains are the 300 mm PVC and 1,400 mm PE100 mains within the SH6 corridor, which would require a long and costly connection. Accordingly, on-site soakage is proposed, consistent with the existing site approach.

12.1.2 Existing Car Park Flooding Remediation

Existing car park flooding will be addressed by extending drainage from suitable areas to the proposed new soakpits, while more remote areas will require additional soakpits. Further soakage testing will be undertaken in the affected areas at the next phase of design to confirm suitability and sizing.

12.1.3 Pipe Network

Stormwater runoff from the building roofs and hardstand areas will be conveyed to soakage as generally indicated on the Concept Drawings - Drawing SKC01 Rev A in annexure A. Roof runoff will be collected through downpipes and directed to the proposed soakage systems, while runoff from car parks and paved areas will be collected via surface channels and conveyed through the pipe network and stormwater quality treatment devices (SWQTDs) prior to discharge to the soakage systems.

12.1.4 Stormwater Disposal

Two proposed soakage locations are shown on Drawing SKC01 Rev A , one in the north-western corner serving the northern building perimeter and western car park, and one in the central-eastern area serving the eastern building catchment. Existing soakpits are also present on site; however, their size, depth and condition require confirmation during detailed design. Proposed soakage devices are to be founded at least 1.0 m into the coarse-grained alluvium to utilise the higher infiltration rates identified by ENGEO (exact depth subject to confirmation by site-specific testing during developed design).

12.1.5 Stormwater Quality Treatment

Stormwater quality treatment will be provided for car parks and vehicle access/driveway areas prior to discharge to the soakage system. Appropriate stormwater quality treatment devices (SWQTDs) will be incorporated to address contaminants associated with vehicle movements and paved surfaces. Final treatment requirements and device selection will be confirmed during detailed design based on the contributing catchments and QLDC requirements.

12.2 WASTEWATER

12.2.1 Existing Network Context

The existing wastewater outfall is located on the adjacent property to the southern site boundary and comprises a 640 mm diameter PVC pipeline with associated manholes along its alignment.

12.2.2 Design Occupancy and Peak Loading

The proposed facility has a maximum peak event occupancy of 2,000 persons, which is adopted as the basis for the wastewater capacity assessment. Day-to-day toilet facilities are designed for approximately 1,500 persons, with existing QEC facilities providing supplementary capacity during larger events.

If a gravity main is viable, design of the private network will be based on NZBC/AS3500 design requirements for fixtures and fittings.

If a pumps station is required, the sizing of the device will need to consider allowable outfall rates to the mains.

The resulting peak wastewater demand will require confirmation from QLDC of existing network capacity and available connection point.

12.2.3 Network Constraint

QLDC has confirmed a known capacity constraint in the existing gravity wastewater pipe between MH 204882 and the Shotover WWTP, which is currently being designed for upgrade. The proposed QEC development's wastewater flows will need to be assessed against the upgraded network capacity. There is a programme risk that if the QLDC upgrade is not completed before the QEC new building is operational, there may be insufficient network capacity to accept the additional flows.

12.2.4 Wastewater Discharge Options

Two wastewater discharge options have been developed and are presented below for consideration. The existing wastewater infrastructure and confirmed site ground levels are the primary determinants of the preferred option, as these directly influence the feasibility of achieving a practical gravity connection to the existing wastewater network. The options are discussed below:

Option 1 — Gravity Wastewater Discharge

A gravity wastewater solution was initially considered as the preferred option due to its lower operational and maintenance requirements and avoidance of pump-related failure and downtime risks. A proposed building FFL of 356.1 m NZVD2016 provides sufficient fall for a 150 mm PVC main at 1:150 grade to discharge to existing WWMH ID 184560 on Joe O'Connell Drive, as shown on Drawing SKC01 Rev A. A flushing syphon chamber is proposed to maintain performance during low-flow conditions.

However, site investigation confirmed that the existing wastewater pipe is significantly shallower than indicated by the desktop information. Consequently, achieving adequate pipe cover and a feasible gravity connection would require substantial additional site filling, making the gravity option less feasible.

Option 2 — Pumped Wastewater Discharge

The pumped wastewater solution is considered the more feasible option given the existing site levels, the shallow depth of the existing wastewater infrastructure and the substantial site filling that would be required to achieve a practical gravity connection. The pumped solution would allow the building FFL to be reduced to approximately 355.5 m NZVD2016, minimising additional fill and associated ramping requirements.

The proposed system would comprise an approximately 43,000 L wastewater holding tank, a 2,000 L pump station with twin macerating pumps and telemetry, and a 40 mm PE rising main connecting to the existing wastewater connection at WWMH ID 102972 at the southern end of the site.

Importantly, the holding tank would provide temporary storage and buffering of peak wastewater flows. This is considered beneficial given the proposed peak occupancy of approximately 2,000 people and the known capacity constraints within the downstream wastewater network. The temporary storage would allow peak inflows to be attenuated and pumped to the network at a controlled rate, thereby reducing the risk of overloading the already constrained downstream system during peak demand periods.

QLDC has confirmed that it has no objection in principle to the pumped wastewater option. While the system has higher capital and ongoing operational and maintenance requirements than a conventional gravity connection, the pumped option provides greater flexibility in establishing the development platform and offers a more appropriate solution considering the existing site levels and downstream network constraints. The twin-pump arrangement also provides operational redundancy and improved system resilience.

12.2.5 Wastewater Capacity Assessment

A formal wastewater capacity assessment is required prior to detailed design, based on the 2,000-person peak occupancy and the known downstream network constraint. The assessment should confirm the proposed peak and average wastewater flows, existing and upgraded network capacity, and the suitability of the proposed gravity and pumped options. It should also confirm network levels, the adequacy of the 43,000 L holding tank and pump system, QLDC trade waste requirements, any developer contributions, and the timing of the QLDC network upgrade relative to the QEC project programme.

12.3 WATER SUPPLY

12.3.1 Design Approach

The existing centre is supplied from the QLDC water network via a 150 mm diameter Principal Supply Main (GIS ID 404660) located within the site area. A 200 mm diameter QLDC Trunk Main (GIS ID 409397) is also located adjacent to the site and provides the wider network supply. The presence of these existing mains indicates that water supply infrastructure of sufficient scale is available in the vicinity of the site.The existing network configuration, operating pressures and available flow rates, is to be confirmed with QLDC Water Services prior to detailed design.

For the proposed new building, a 100 mm diameter water supply extension will be provided from the existing RPZ backflow prevention assembly at the site connection point. The 100 mm diameter extension will run along the northern perimeter of the building and connect to the proposed potable water system serving the new building, as indicated on Drawing SKC01 Rev A.

The adequacy of the proposed connection and available capacity is subject to confirmation by QLDC Water Services during detailed design.

12.3.2 Fire Fighting Water Supply

The existing building's fire sprinkler system has a documented water supply deficiency, as identified in SAIL Inspection Report No. 8654 dated 15 June 2026. The available network flow and pressure are below the existing system design requirements, and a Fire System Impairment Notice has been issued.

This deficiency is relevant to the proposed new building as the existing reticulated water supply should not be relied upon as the sole fire-fighting water source until the network capacity and pressure have been confirmed by QLDC Water Services.

12.4 CAR PARK DESIGN AND ACCESS ROADS

The proposed car park is located to the north and west of the new Events Centre, with fully sealed internal driveways, parking areas, service areas and access lanes. The layout provides parking adjacent to the building, additional parking and circulation areas towards the site exit, and dedicated service and maintenance access. A potential future link road around the artificial turf is also indicated on Drawing SKC01 Rev A and is to be confirmed during design development.

The car park will generally comprise asphalt surfacing with concrete kerb-and-channel and raised nib kerbs, consistent with the existing QEC car park. Paved areas will generally be graded at approximately 2% crossfall towards concrete vee-channels with longitudinal grades of approximately 0.5% where practicable, directing runoff to the stormwater collection, treatment and soakage system.

The preliminary pavement design comprises 200 mm AP65 sub-base, 150 mm TNZ M4 AP40 basecourse and 30 mm asphalt surfacing, based on a preliminary design subgrade CBR of 4%. Topsoil and unsuitable material will be removed and the subgrade compacted prior to pavement construction. The CBR and pavement condition will be verified by DCP testing and geotechnical inspection during construction, with the final pavement design confirmed during detailed design based on traffic loading, service and emergency vehicle requirements and QLDC requirements.

Parking provision will comply with the applicable QLDC District Plan requirements, including accessible parking in accordance with NZS 4121. EV charging locations will be coordinated with the electrical design.

12.5 EARTHWORKS

12.5.1 General

Earthworks will be required to establish suitable building and trafficable platforms, generally following the existing site levels. Works will include stripping approximately 250–300 mm of topsoil and unsuitable material, with vegetation and root removal as required, subject to geotechnical inspection. Any uncontrolled fill beneath the building platform will be over-excavated to suitable in-situ ground, while existing granular hardfill may be retained subject to geotechnical assessment.

Earthworks will include trimming to design subgrade levels across the building, car park, service/maintenance areas and cycleway, together with excavation for underground services and stormwater soakage systems. Final earthworks extents and volumes will be confirmed during developed design.

12.5.2 Erosion and sediment control

All earthworks will comply with the geotechnical recommendations and QLDC Land Development and Subdivision Code of Practice. An Erosion and Sediment Control Plan (ESCP) will be prepared prior to construction in accordance with Auckland Council GD05, as adopted by QLDC. Appropriate cut-off drains and flow paths will be maintained to prevent sediment runoff, particularly given the proximity of the stream and reserve to the north.

13. Civil Options Study

The civil options assessment considered alternative solutions for stormwater, wastewater, water supply, fire-fighting water and site access, taking into account the existing site conditions, QLDC infrastructure, geotechnical constraints and project requirements.

13.1 STORMWATER

ENGEO infiltration testing confirms that soakage into the underlying alluvium is feasible, subject to site-specific verification during detailed design. Connection to the existing reticulated network is not preferred due to the absence of a network directly servicing the development area, the distance to the SH6 mains, and existing drainage capacity concerns. On-site detention is not proposed at concept stage but may be reconsidered if detailed soakage testing identifies insufficient capacity.

The preferred concept therefore comprises distributed soakage devices, stormwater quality treatment and secondary overland flow paths for exceedance events. Remediation of existing car park drainage is to be addressed via linkage of failing devices to new soakage chambers, and the northern carpark extension will likely have a separate soakpit.

WASTEWATER

Two wastewater discharge options were considered:

- Option 1 – Gravity discharge: 150 mm PVC gravity main to the existing northern WWMH, with a building FFL of 356.1 m NZVD2016.
- Option 2 – Pumped discharge: A wastewater holding tank and pump station discharging via a rising main, allowing a lower building FFL of approximately 355.5 m NZVD2016.

The site investigation has confirmed that the existing wastewater pipe is significantly shallower than indicated by the desktop information. The existing site ground levels, and practical grades for a 150 mm gravity wastewater connection, mean that achieving a gravity connection would require substantial filling and raising of the development platform.

The pumped wastewater option therefore provides a more practical alternative by reducing the extent of required site filling and allowing greater flexibility in establishing the building platform. The final wastewater solution will be confirmed following QLDC network capacity confirmation, detailed level verification and assessment of the downstream network and connection requirements.

13.2 WATER SUPPLY

The preferred solution is a 100 mm water supply extension from the proposed RPZ backflow prevention assembly, connected to the existing 150 mm Principal Supply Main (GIS ID 404660). The adjacent 200 mm trunk main provides additional network context. Final connection capacity, pressure and available flow are to be confirmed by QLDC Water Services.

13.3 FIRE-FIGHTING WATER SUPPLY

Due to the documented deficiency in the existing fire-fighting water supply, reliance on the existing reticulated network alone is not recommended for the new facility.

13.4 PREFERRED CIVIL CONCEPT

The preferred civil concept is shown on Drawing SKC01 Rev A – Civil Concept Design, dated 10 August 2026. The principal solutions are:

Discipline	Preferred Concept
Stormwater	Soakage to ground via soakage pits and SWQTDs, with secondary overland flow paths to internal carriageways and western golf course low point
Wastewater	Option 2 — Pumped discharge via rising main existing wastewater outfall at southern site boundary, subject to network capacity confirmation.
Water Supply	100 mm diameter extension from RPZ backflow prevention assembly to existing 150 mm Principal Supply Main (GIS ID 404660)
Fire Fighting	Onsite fire-fighting water storage tank and booster pump system, independent of reticulated network
Car Park and Access	Fully sealed asphalt car park and access areas with concrete kerb and channel; 200 mm AP65 sub-base + 150 mm TNZ M4 AP40 base course + 30 mm asphalt surfacing

The preferred concept remains subject to QLDC network capacity confirmation, detailed geotechnical verification, final architectural levels, detailed pavement design, stormwater soakage testing, and fire engineering design.

Drawing SKC01 Rev A provides the spatial arrangement of the proposed civil infrastructure, including stormwater collection and soakage, wastewater, water supply, car parking, access, service areas and proposed levels. Service locations and levels shown are indicative and are to be verified during detailed design.

14. Key Considerations For Preliminary Design

The following key civil design matters are to be progressed and confirmed during the Preliminary Design stage:

- Complete site-specific soakage testing at the proposed soakage locations and confirm final soakpit/device sizing and locations.
- Investigate existing soakpits and confirm their condition, capacity and potential for reuse.
- Confirm the stormwater quality treatment requirements and preferred SWQTD with QLDC.
- Obtain QLDC confirmation of existing and upgraded wastewater network capacity based on the adopted 2,000-person peak occupancy.Confirm the QLDC upgrade programme between MH 204882 and the Shotover WWTP and its implications for the project programme.
- Confirm the final pumped wastewater solution, including holding tank volume, pump duty, rising main diameter and controlled discharge rate.
- Confirm the final building FFL and undertake detailed earthworks quantity calculations.
- Confirm the final car park layout, parking provision and accessibility requirements.
- Confirm the location and protection requirements for existing Aurora Energy HV cables and other underground services.

The above matters are to be resolved during Preliminary Design and will inform the progression of the civil concept to Developed Design. The current concept represents the best available information at this stage and remains subject to refinement following confirmation of survey, geotechnical conditions, network capacity, authority requirements and coordination with the wider design team.

Appendix A: Civil Options Study Drawings

Multiple existing soakpits (unknown size, depth, location, etc)

Potable connection to ex 100mmØ RPZ/valve

Flushing syphon Chamber

Avg FGL (carpark) 355.4m

356.1m

100mm PVC @ 1:120

150mm PVC WW @ 1:150

150mm PVC SW @ 1:100

150mm PVC SW @ 1:100

Proposed Stormwater Soakpit & SWQTD

Proposed Stormwater Soakpit & SWQTD

Building FFL 356.1m* (Gravity WW)

Building FFL 355.5m* (Pumped WW)

225mm PVC SW @ 1:200

225mm PVC SW @ 1:100

150mm PVC SW @ 1:100

Possible link road around artificial turf to main drive/extra parking

Existing WWMH

150mm PVC WW @ 1:150

JOE O'CONNELL DRIVE (LEGAL ROAD)

1:15 grade Ramp to access service lane (FGL top of ramp 355.9)

2000Litre Pump station with twin macerating pumps and telemetric control unit

43000Litre Wastewater holding tank

40mm PE WW rising mains

New Wastewater rising main to connect to existing manhole

Existing WWMH

A SKC02

B SKC02

LEGEND

- Site Boundary
- Adjoining Boundary
- Proposed Hardstand
- Proposed Building
- Proposed swale
- Proposed Stormwater Manhole
- Proposed Wastewater Manhole
- SW — Proposed Stormwater
- WW — Proposed Gravity Wastewater
- W — Proposed Water Supply
- Proposed Stormwater Soakpit
- Proposed Downpipes
- Proposed option for Wastewater rising mains

NOTES

1.The nominated levels indicated are provisional only and subject to change during design development.

2. All services locations shown are indicative only, to be confirmed during design development following investigation of undeground services and soakage testing.

3.Extent of earthworks to be confirmed at developed design stage

4.All heights are based on survey information provided byu Patersons (Vertical Datum NZVD 2016)

DRAWING TO BE PRINTED IN COLOUR

JASMAX SOUTH | QEC EVENTS CENTRE | S2003418 | CIVIL CONCEPT DESIGN-OPTIONEERING

SCALE : NTS

SKC03 B

B VC 13/08/2026 Concept Design

kotahi

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Appendix B: Final Preferred Concept Drawings

CIVIL & STRUCTURAL ENGINEERING DRAWINGS
CONCEPT DESIGN ISSUE

QLDC SPORT AND RECREATIONAL CENTRE
JASMAX SOUTH |

Kotahi Engineering Studio

Canterbury
Hawke's Bay
Marlborough

E admin@kotahistudio.co.nz
kotahistudio.co.nz

General Notes:

-9m knee height

- 5 degree roof pitch

- Allowance of 0.2kPa for future flush solar

- Facade assumes 50kg/m2 cladding, precast wall cladding up to 3m

- Services, ceiling and misc SDL of 0.25kPa

- Design assumes no significant openings in external facade

- Assume that no catwalks are required below the roof line. Allowance for rooftop plant on the lean-too structure

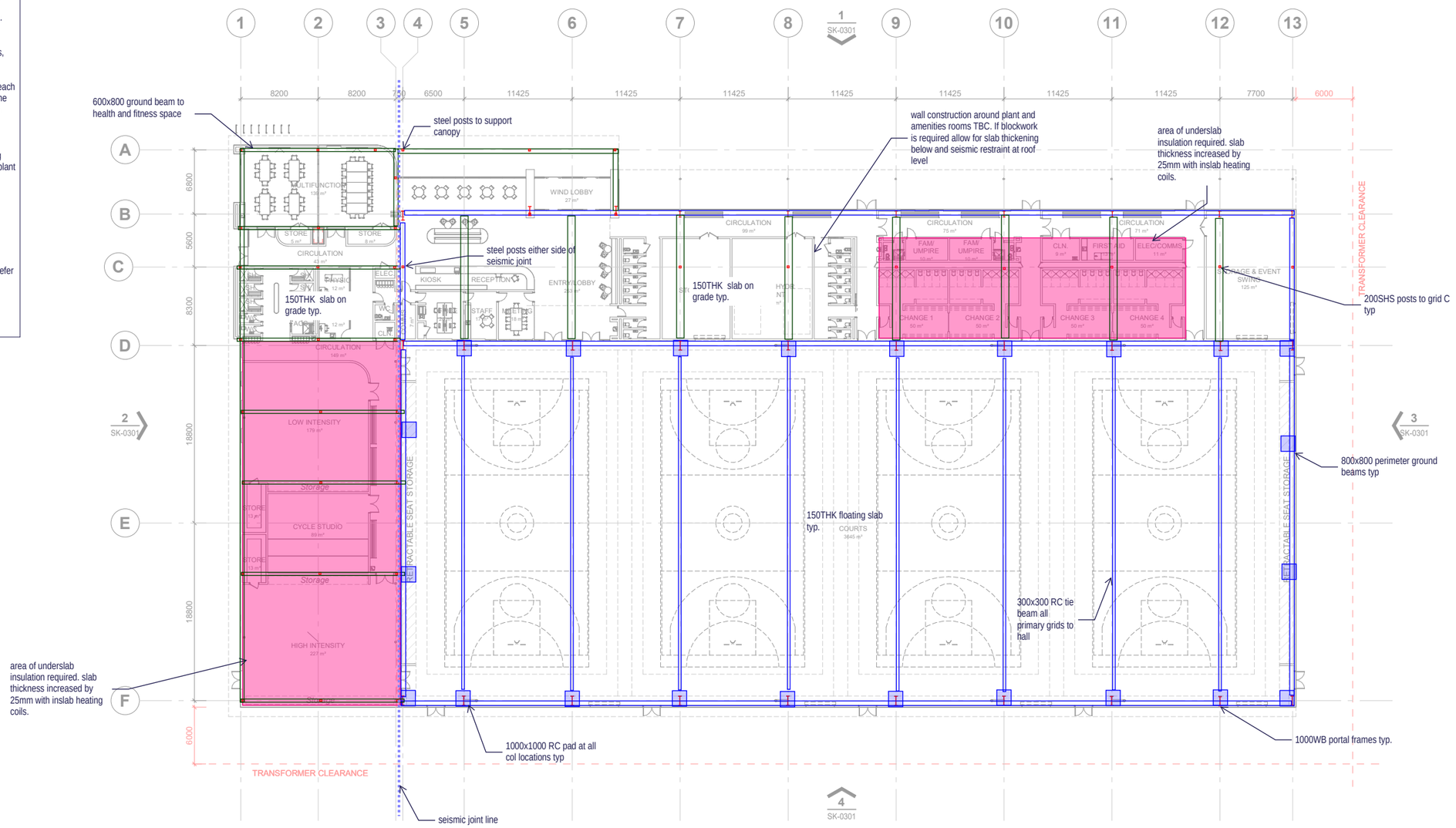
- Foundations to consists of a perimeter RC ground beams, with transverse ground beam ties across the building. A 150mm floating RC slab ontop of the foundations to suit supplied sprung floor system. The foundation solution for each of the grid spacing options is similar. However, each gridline has a tie beam so additional grids means more foundation ties.

- Secondary steel structure should be allowed for including stubs protruding through the roof for a lightweight rooftop plant deck.

- Allow for construction joints every second grid in each direction for slab on grade. Isolation joints in between construction joints (typical).

-Slab on grade to be isolated from foundations.

- Floor finishes and inslab heating to arch requirements. Refer to arch drawings for insulation requirements to slab



Ground Floor Plan

DRAWING TO BE PRINTED IN COLOUR

JASMAX SOUTH | QUEENSTOWN EVENTS CENTRE NEW COURTS | S2003418 | Structural Ground Floor Plan | A BL 14.08.2026 CONCEPT DESIGN | For Cost Comparison | kotahi | SK1.01 A

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General Notes:

-9m knee height

- 5 degree roof pitch to be documented by arch

- Allowance of 0.2kPa for future flush solar

- Facade assumes 50kg/m2 cladding, precast wall cladding up to 3m

- Services, ceiling and misc SDL of 0.25kPa

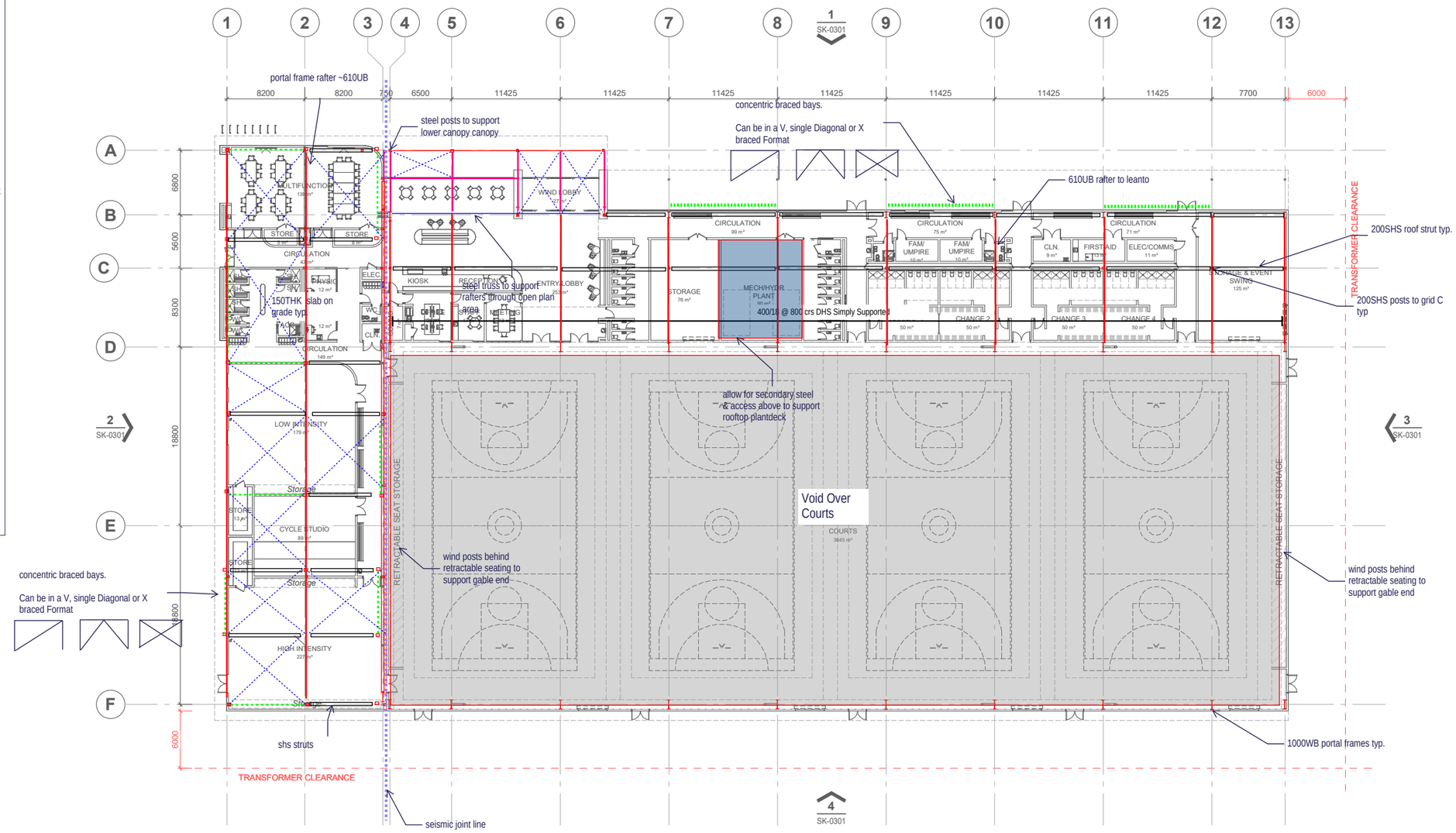
- Design assumes no significant openings in external facade

- Design would benefit from the inclusion of open ridge vents if acceptable to mechanical engineer

- Assume that no catwalks are required below the roof line. Allowance for rooftop plant on the lean-too structure

- Foundations to consists of a perimeter RC ground beams, with transverse ground beam ties across the building. A 150mm floating RC slab ontop of the foundations to suit supplied sprung floor system. The foundation solution for each of the grid spacing options is similar. However, each gridline has a tie beam so additional grids means more foundation ties.

- Secondary steel structure should be allowed for including stubs protruding through the roof for a lightweight rooftop plant deck.



Lower Roof Plan

DRAWING TO BE PRINTED IN COLOUR

JASMAX SOUTH | QUEENSTOWN EVENTS CENTRE NEW COURTS | S2003418 | Lower Roof Plan | A BL 14.08.2026 CONCEPT DESIGN

For Cost Comparison

kotahi | SK1.02 A

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General Notes:

-9m knee height

- 5 degree roof pitch

- Allowance of 0.2kPa for future flush solar

- Facade assumes 50kg/m2 cladding, precast wall cladding up to 3m

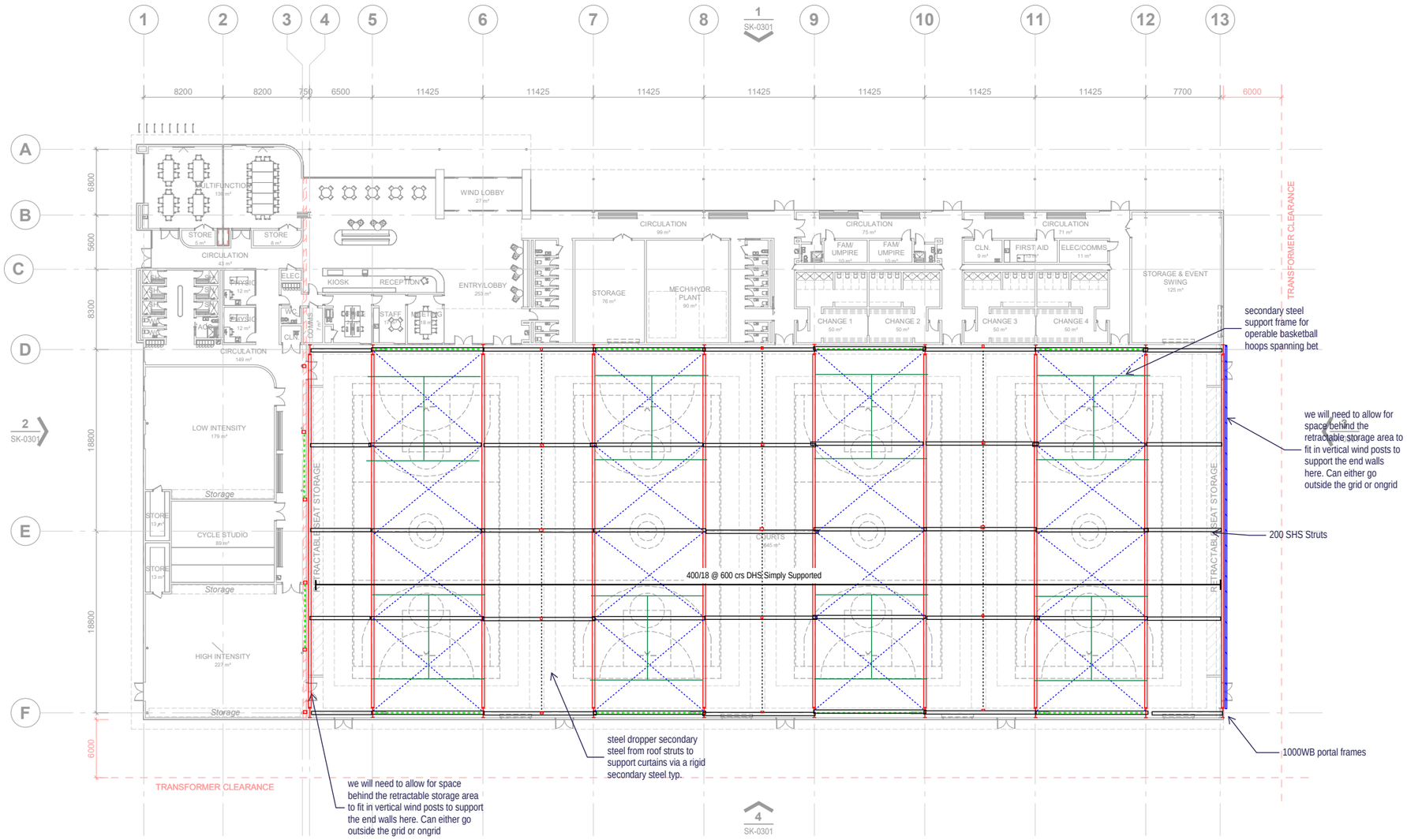
- Services, ceiling and misc SDL of 0.25kPa

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- Allowance for rooftop plant on the lean-too structure

- Foundations to consists of a perimeter RC ground beams, with transverse ground beam ties across the building. A 150mm floating RC slab ontop of the foundations to suit supplied sprung floor system. The foundation solution for each of the grid spacing options is similar. However, each gridline has a tie beam so additional grids means more foundation ties.

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MULTIFUNCTION
130 m²
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CIRCULATION
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WIND LOBBY
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CIRCULATION
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FAM/ UMPIRE
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FAM/ UMPIRE
10 m²
CLN.
9 m²
FIRST AID
11 m²
ELEC/COMMS
11 m²
STORAGE & EVENT SWING
125 m²
TRANSFORMER CLEARANCE
ELEC
KIOSK
RECEPTION
ENTRY/LOBBY
253 m²
STORAGE
76 m²
MECH/HYDR PLANT
90 m²
CHANGE 1
50 m²
CHANGE 2
50 m²
CHANGE 3
50 m²
CHANGE 4
50 m²
PHYSIO
12 m²
PHYSIO
12 m²
PHYSIO
12

Multiple existing soakpits (unknown size, depth, location, etc)

Potable connection to ex 100mmØ RPZ/valve

Flushing syphon Chamber

Avg FGL (carpark) 355.2m

356.1m

100mm PVC @ 1:120

150mm PVC WW @ 1:150

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1:15 grade Ramp to access service lane (FGL top of ramp 355.9)

Existing WWMH

2000Litre Pump station with twin macerating pumps and telemetric control unit

43000Litre Wastewater holding tank

40mm PE WW rising mains

New Wastewater rising main to connect to existing manhole

Existing WWMH

A SKC02

B SKC02

LEGEND

- Site Boundary
- Adjoining Boundary
- Proposed Hardstand
- Proposed Building
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- Proposed option for Wastewater rising mains

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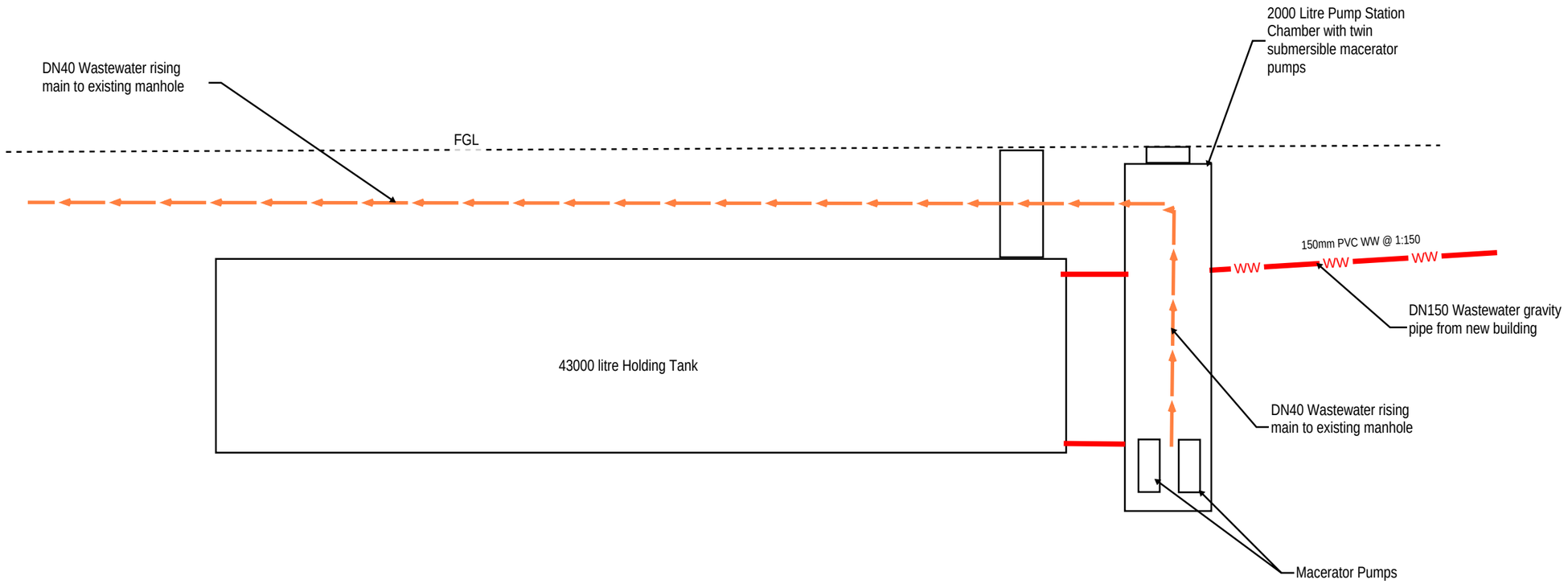
JASMAX SOUTH | QEC EVENTS CENTRE | S2003418 | CIVIL CONCEPT DESIGN -PREFERRED OPTION

SCALE : NTS

kotahi SKC01 B

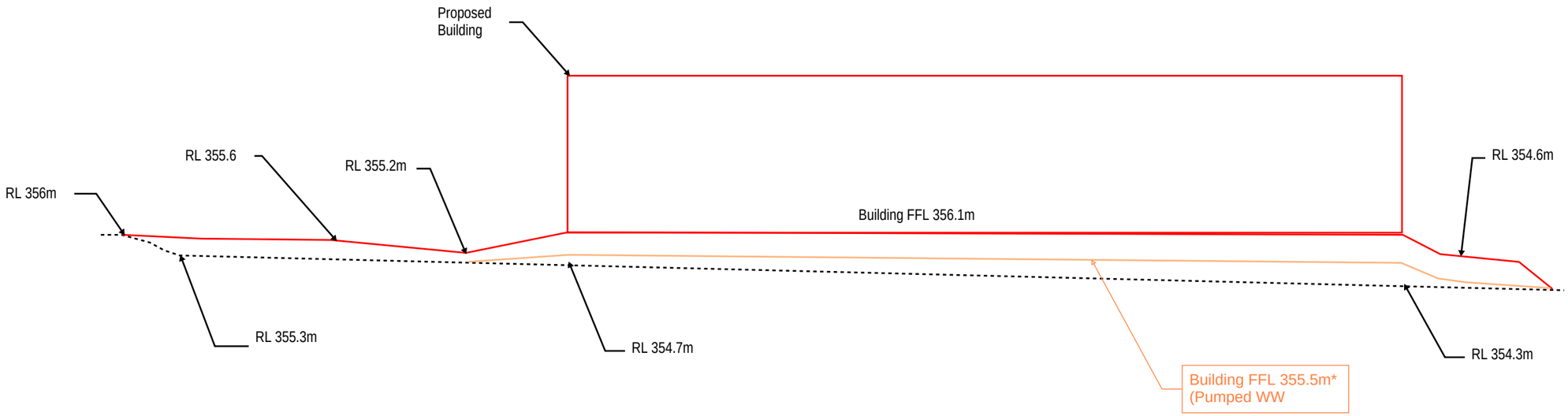
B VC 13/08/2026 Concept Design

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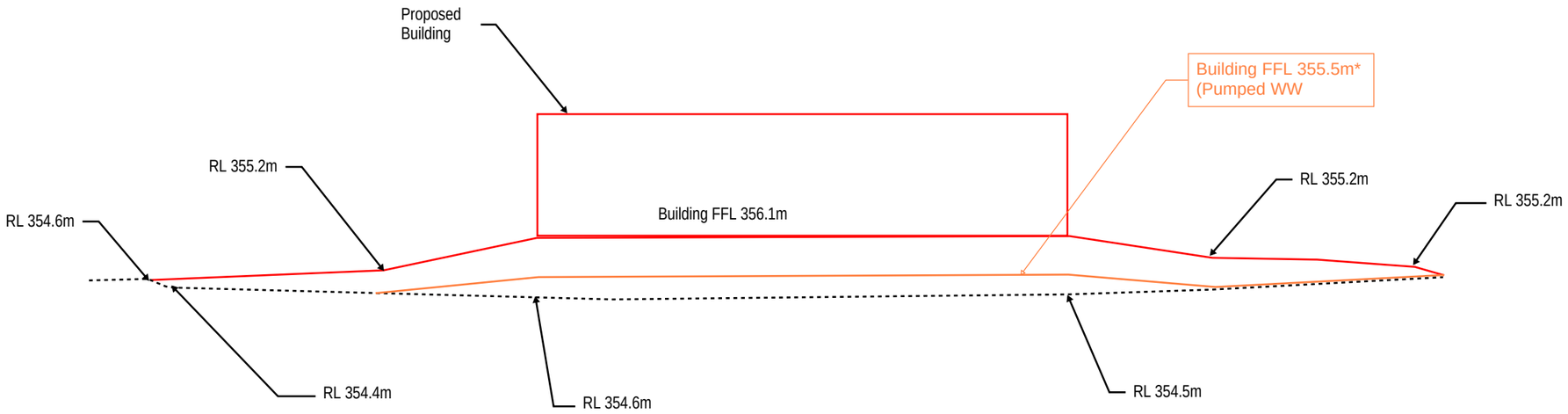


Pump Station Schematic Elevation
(N.T.S)

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A / SKC01 Longsection Section A-A
NTS



B / SKC01 Longsection Section B-B
NTS

NOTES

1.The nominated levels indicated are provisional only and subject to change during design development.

2. Extent of earthworks to be confirmed at developed design stage

3.All heights are based on survey information provided byu Patersons (Vertical Datum NZVD 2016)

Note: all proposed levels are to convey Concept design intent only - these should not be considered accurate for pricing purposes

DRAWING TO BE PRINTED IN COLOUR

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B VC 13/08/2026 Concept Design

SCALE : NTS

kotahi SKC04 B

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7.4.2 Services

Queenstown Events Centre - Indoor Courts & Carpark

Concept Design Report

Prepared for:
Queenstown Lakes District Council | Jazmax

Prepared by:
Stantec New Zealand

Issue: Authorised for Concept Design,
14 August 2026

Project/File: 310701051 - QEC - Stantec Concept Report.docx

Revision Schedule

Revision No.	Date	Description	Prepared by	Reviewed by	Project Manager Final Approval
1	14/08/2026	Concept Design Issue	BC, MA, AM, AC	SP, MA, BC	MA

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1 Introduction

This Concept Design Report outlines the Sustainability, Mechanical, Hydraulic, Electrical and Fire Engineering requirements for Queenstown Events Centre & Carpark Project located in Frankton, Queenstown.

The Queenstown Events Centre (QEC) is to be a part of an existing major multi-purpose sports and events complex owned and operated by the Queenstown Lakes District Council. Established in 1997, the facility serves as a primary hub for sporting, recreational, cultural, and community activities within the rapidly growing Queenstown Lakes District.

This project involves the development of a new indoor sports facility building designed to significantly increase capacity and future-proof the centre. The proposed works include the construction of four multi-purpose courts, fitness facilities, and the reconfiguration and enlargement of parking and site access. The development is also intended to enhance the centre's capability to host a wider range of events, including conferences, concerts, and high-profile televised sporting events.

The reference documents for this Concept Report are the Architectural drawings dated 7th August 2026, the Design Team Meetings held to date, QLDC project briefing documents, and workshops held directly with QLDC.

This report focuses on the Sustainability, Mechanical, Hydraulic, Electrical and Fire Engineering requirements expected for a development of this nature according to the current NZ Building Code design requirements and the project brief.

The design concepts presented need to be reviewed and approved by the client.

Each sub-section provides information on the key aspects related to the design; the main points include:

- Green Star Buildings NZ 4 Star rating
- Electrical Reticulation
- Telecommunications Passive Infrastructure
- Lighting Systems
- Air conditioning and ventilation
- Water supply and sanitary drainage
- Fire safety for a large > 2,000 person event
- Fire protection systems

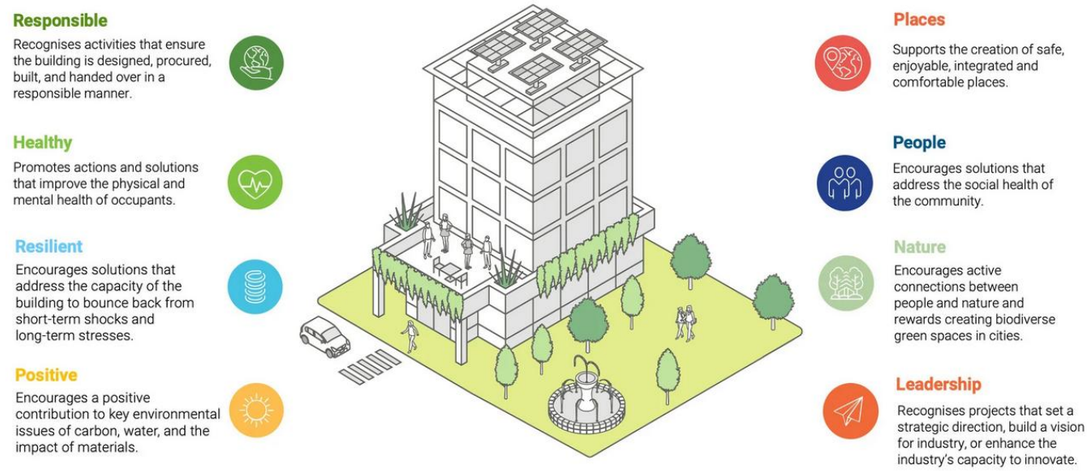
2 Sustainability

2.1 Green Star Buildings Rating

We understand that QLDC aim to achieve at least a 4 star Green Star rating under the New Zealand Building v1.0 tool.

Green Star is a holistic sustainability rating tool to evaluate the initiatives undertaken by a building project from design through construction to building occupation. It provides an externally validated pathway to ensure that the intents of the initiatives are undertaken and carried through with reliable evidence to verify.

As of June 2025 the old Green Star design and As-Built v1.1 tool has been retired. In its place, Green Star Buildings has seen a wholesale change in the priorities of the areas of sustainability that underpin the approach to this rating system. The credits have been rearranged within 8 main categories outlined below.



This project is an excellent candidate for a Green Star Buildings rating as it has the following inherent features:

- Location close to an urban area to take advantage of public transport and walkability access
- Reuses the site so as not to use any high ecological value land
- Space for onsite renewable energy generation using strategically placed solar PV panels
- Opportunities to implement passive design features to reduce energy consumption
- Opportunities for sustainable transport support.
- Opportunity for points by converting car parks to EV and low emissions vehicles parks

2.1.1 Green Star Minimum Expectations

The following table outlines the minimum project requirements for a Green Star rating to progress. This should be reviewed prior to registration of the project with the New Zealand Green Building Council.

Category	Credit	Requirements
Responsible	Responsible Construction	Engage a contractor with an Environmental Management Plan (EMP) and Environmental Management System (EMS) and divert 40% of Construction waste from landfill. Queenstown's construction waste management facilities need to be reviewed to determine any risk to this credit and by extension the rating.
	Verification and Handover	Provide metering and commissioning, design and test for air tightness and provide handover information for efficient operation. (Green Star does not impose any consequences if the target airtightness levels are not achieved).
	Responsible Resource Management	Provide space for waste to be separated during building operation.
Healthy	Clean Air	Provide increased ventilation rates and ensure pollutant infiltration is mitigated.

Category	Credit	Requirements
	Light Quality	Provide high quality light fixtures and ensure access to daylight is maximised for occupants.
	Acoustic Comfort	Engage a consultant to assess the acoustic quality of indoor spaces.
	Exposure to Toxins	Select low emitting (e.g., VOC and formaldehydes) materials products.
	Thermal Comfort and Amenity Spaces	Building to be modelled to achieve a high level of thermal comfort using the same base model as for the Energy Use credit below.
Resilient	Climate Change Resilience	Complete the provided climate change pre-screening checklist.
Positive	Upfront Carbon Emissions	Complete an upfront carbon model and ensure a 15% reduction compared to a standard practice reference.
	Energy Use	Complete an energy model and ensure a 10% reduction compared to a standard practice building.
	Energy Source	Ensure no fossil fuels are used for heating, hot water or cooking.
	Water Use	Complete the water use calculator and ensure a 10/15% reduction compared to a reference.
Places	Movement and Place	Provide accessible showers and changing facilities.
People	Inclusive Construction Practices	The head contractor provides inclusive facilities and protective equipment and installs on site policies on discrimination.
Nature	Impact to Nature	Ensure the building is not built on high ecological value land and minimises light pollution impacts.

Additional points making up the remainder of the pathway to achieving a 4 Star rating should be discussed through a meeting of the project team.

2.2 Building Services Design

Stantec has a multi-disciplinary approach to sustainable building and energy efficient practices. To assist this process, we integrate the practical building design principles with computer-based analysis, in order to achieve an energy efficient environmentally friendly design.

2.2.1 Implementation (Mechanical & Hydraulic)

Energy efficiency and sustainability will be incorporated into the mechanical and hydraulic services where practical and economically feasible. Currently we are proposing the following efficiency and sustainability initiatives:

- The use of air source heat pumps to meet the domestic water heating load.
- High efficiency heatpump/chiller for heating, cooling and ventilation to the sports hall.
- Demand based ventilation based on CO_2 control
- Economy cycle on AHUs to provide free cooling when the outdoor conditions allow
- Provision of VRF (variable refrigerant flow) type air conditioning with wall type controllers c/w inbuilt temperature sensors.
- Air Distribution utilising modern swirl type air diffusers
- Provision of increased fresh air supply over building code for promotion of occupant health and wellbeing.
- Mechanical ventilation utilising heat recovery wherever possible and economic to provide.
- BMS controls for energy consumption monitoring, scheduling etc (Green Star requirement).

2.2.2 Implementation (Electrical)

The electrical design will be carried out to minimise the use of energy on a day to day basis, thereby reducing the overall power costs. We also promote the use of LED technology within the primary lighting design thereby decreasing the energy consumption and the on-going maintenance costs. Further energy efficiencies would be achieved by the use of automatic controls such as:

- Provisioning for Solar ready approach, providing cable pathways and provisions on switchboard design for connection of a Photovoltaic system.
- Smart carpark lighting control.
- Daylight harvesting where appropriate to reduce lighting load
- The use of occupancy sensors in areas of low use or limited occupancy to reduce lighting load
- Electrical energy metering in different areas of the building (Green Star requirement)
- Exterior power connections provided to avoid need to diesel generators to serve events.

2.3 Key Decisions and Outstanding Design Items

The following list captures the main sustainability related design items that require further client direction or design development:

i. To explore the Green Star opportunities further, a credit tracker should be built by Stantec's Green Star Accredited Professional to guide the targeting of credits.

ii. Confirmation of the remaining credit choices to make a 4 star rating by consensus of the design team and client.

iii. Adding to architects scope if not already covered: Integration of targeted air tightness design principles and thermally efficient fabric.

iv. Ensure Acoustic consultant scope covers Green Star rating related considerations and testing.

v. Engagement of the following:

   a. Energy Modeller – If engaged for this, Stantec can integrate this work into a more granular mechanical design model and also use the model for H1 compliance

   b. Embodied Carbon Professional – trained in the use of the NZGBC Embodied Carbon calculator or third party software.

   c. Air Tightness Professional for air permeability testing at construction phase but also can provide design advice to architect during design.

3 Mechanical Engineering Services

3.1 Introduction

This section covers the Mechanical Services systems proposed for this development with services designed and installed to comply with the requirements of the current NZ Building Code and relevant NZ Standards.

Note that all sizes, quantities and capacities used as the basis of this report are preliminary based on the information in our possession and may be subject to change during later design stages.

3.2 Standards

- AS/NZS 1668.1 – The use of ventilation and air conditioning in buildings: Part 1 Fire and smoke control in buildings
- AS 1668.2 – The use of ventilation and air conditioning in buildings: Part 2 Mechanical ventilation in buildings
- AS/NZS 3000 Electrical installations (Australian/New Zealand Wiring Rules)
- AS/NZS 5149 – Refrigerating systems and heat pumps – Safety and environmental requirements
- NZS 4219 Seismic resistance of engineering systems in buildings
- NZS 4303 Ventilation for Acceptable Indoor Air Quality

3.3 Scope

The extent of the mechanical works associated with the proposed development can be summarised as follows:

- Heating, cooling and ventilation to the main sports hall to support day to day use as well as regional/international use for the 'show court' scenario, conferences and similar events.
- Air conditioning and ventilation to the Lobby, Multifunction, Low Intensity, High Intensity and Cycle Studio areas.
- Heating, exhaust ventilation and tempered make-up air to the changerooms and bathrooms.
- Heating and outdoor air ventilation to the circulation areas
- Exhaust ventilation to toilets and cleaner's cupboards
- Cooling to comms rooms as required

3.4 Design Criteria

3.4.1 Mechanical Ventilation

All occupied spaces will be provided with mechanical ventilation systems, these will be designed in accordance with NZBC acceptable solution G4, NZS 4303:1992 (supply air) & AS1668.2:2002 (exhaust vent)

Room Type	Expected maximum occupancy	Supply ventilation rates	Exhaust ventilation rates
Sports Hall	2000	8 L/s per person	If smoke vent is required (TBC)
Entry Lobby	100	1.5 L/s per m²	-
Multifunction	50	8 L/s per person	-
Low Intensity	40	8 L/s per person	-
High Intensity	40	8 L/s per person	-
Cycle Studio	20	8 L/s per person	-
Offices, first aid, physio	2-4	10 L/s per person	-
Circulation	-	0.25 L/s per m²	-
Changerooms	-	-	10 air changes per hour
Showers, toilets	-	-	25 L/s per fixture or 10 L/s per m²

3.4.2 Internal Design Temperatures

Design parameters are based on the following outside air conditions for Queenstown which represent a 2.5% frequency of occurrence:

- Summer: 25.6°C db, 20.5°C wb
- Winter: -3.2°C db

Internal space temperatures will be controlled to the temperatures as specified below. The control tolerance in apartments will be +/- 2°C.

Room Type	Winter Dry Resultant Temperature °C	Summer Dry Resultant Temperature °C
Sports Hall	17	22
Entry Lobby	20	22
Multifunction	20	22
Low Intensity	20	22
High Intensity, Cycle Studio	16	20
Offices, first aid, physio	21	21
Circulation	20	Uncontrolled
Changerooms, bathrooms	22	Uncontrolled
Toilets	18	Uncontrolled

3.4.3 Noise Control

Mechanical services plant and equipment will be provided with acoustic control measures so that the noise levels arising from simultaneous operation of all mechanical systems do not exceed the maximum recommended design sound levels for each space as detailed in AS/NZS 2107:2000.

Breakout noise from external mechanical equipment will not exceed QLDC boundary criteria. Typical maximum design values are listed below;

Room Type	Maximum noise levels (NC)
Sports Hall	40
Entry Lobby	40

Room Type	Maximum noise levels (NC)
Multifunction	35
Low Intensity	35
High Intensity, Cycle Studio	40
Offices, first aid, physio	35
Changerooms, bathrooms	45
Toilets	45

3.5 Proposed HVAC Services

3.5.1 Sports Hall

The main sports hall will be heated, cooled and ventilated using two air handling units (AHUs) located within the main mechanical plantroom. The AHUs will supply conditioned air to the hall through insulated sheetmetal ductwork. Air will be distributed within the hall through fabric ducts at high level.

Return air will be drawn through louvres mounted on the wall at either end of the hall and ducted back to the AHUs. Outdoor air will also be provided, with the rate determined by air quality sensors mounted in the return airstream. Motorised dampers will modulate to maintain appropriate air quality within the sports hall. An economy cycle will also be utilised to enable 'free cooling' when conditions permit.

Roof mounted fans will provide a spill air path and will vary their speed to match the outdoor air supply. The fans will also be used for smoke exhaust (requirement for this is TBC).

Heated or chilled water will be provided to the AHUs from a 2-pipe roof mounted heatpump/chiller. The heatpump will operate on a seasonal basis so will only be in heating or cooling depending on the time of year. A buffer tank, manifolds and pumps in the plantroom will distribute heated/chilled water to the AHUs.

3.5.2 Lobby, Multifunction, Low Intensity, High Intensity and Cycle Studio

These areas will be heated and cooled using VRV/VRF air conditioning systems. The outdoor units will be located at ground level to the south-west or on the roof plant deck. Refrigerant will be piped to indoor units serving individual spaces.

Indoor units will be typically concealed, ducted type or ceiling mounted cassettes. Hi-walls may be used in smaller spaces such as Physio or First Aid rooms.

Ventilation will be provided using heat recovery systems; these units transfer energy from the outgoing airstream to the incoming air, thus providing an energy efficient means of pre-treating incoming outdoor air. These will typically be set to a fixed supply rate.

3.5.3 Bathrooms and Changerooms

These areas will be heated using a mix of electric underfloor and overhead radiant heating. Exhaust ventilation will be provided using heat recovery systems, providing pre-treatment to incoming outdoor make-up air. Air will also be supplied to adjacent circulation areas.

3.5.4 Circulation Areas

Circulation areas will be provided with electric heating to maintain minimum temperatures during winter. Ventilation will be provided by heat recovery, which will typically be combined with systems serving bathrooms and changerooms.

3.5.5 Toilets and Cleaners Cupboards

These areas will be typically unheated, with temperatures maintained by heat transfer from adjacent areas. Exhaust ventilation will be provided, with make-up air from circulation areas via transfer grilles.

3.6 Electrical for Mechanical and Controls

3.6.1 Mechanical Power Supplies

A mechanical services distribution board will be provided within the main mechanical plantroom. Power supplies will be distributed to items of mechanical plant.

3.6.2 Controls & BMS

Local controls will be provided to each space to allow adjustment of setpoints. Controllers will be located where access is limited to staff. Remote temperature sensors will be provided where necessary to allow appropriate monitoring of space temperatures.

A BMS will be provided to allow overall control of all mechanical services systems. The BMS will also provide trending, energy consumption monitoring, fault notfication The BMS will interface with the common Siemens system utilised in other QLDC facilities and monitored from a central interface.

4 Hydraulic Systems

4.1 General

This section covers the Hydraulic Services Systems with services designed and installed to comply with the requirements of the current NZ Building Code and relevant NZ Standards.

4.2 Domestic Hot & Cold Water Supply

The domestic water system design and installation will be in accordance with NZ Building Code and AS/NZS 3500:2003 (all parts).

A suitably sized domestic cold water supply will be provided to the building by the civil engineer. Backflow prevention and metering will be included within their documents.

Generally all outlets within the events centre will be mains pressure fed with hot water generated by central hot water heatpumps. The heatpumps will be located on the roof plant deck, with hot water storage within the plantroom.

Hot water will be stored and circulated above 60°C to avoid the growth of Legionella bacteria within the system. Thermostatic tempering valves will be installed to provide a maximum 50°C hot water for wash hand basins and showers. Domestic hot water will be supplied to the cleaner's sinks and staff kitchens at 60°C.

Confirmation of the provision of water fountains and hose taps will be required. Tap ware will be as detailed in the Architectural documentation.

A cold water supply will be provided for mechanical plant, including backflow preventer.

4.3 Sanitary Plumbing and Drainage

The sanitary plumbing and drainage services will be designed in accordance with NZBC G13.

The drainage system proposed for the building will be a fully vented modified system and will be designed based on AS/NZS 3500.2:2018. This requires Ø100 lateral running from the building. Venting will be provided as required.

Sanitary plumbing systems including drains, vents and pipework will be grouped and run to the perimeter of the building below ground level for connection into the site main foul sewer systems provided by the Civil Engineer.

Sanitary ware and fittings will be as detailed in the Architectural documentation.

5 Electrical services

5.1 General

The Electrical Systems shall be designed in accordance with all N.Z Building Code Requirements with special reference to the N.Z Electricity Act, the Electricity Regulations and all relevant New Zealand Standards in particular.

- AS/NZS 3000 (The Wiring Rules)
- AS/NZS 2293 (Emergency Evacuation Lighting for Buildings)
- AS/NZS 1680 (Interior Lighting)
- AS/NZS 2560 (Sports Lighting)

All Standards shall be the latest revision incorporating all amendments.

5.2 Scope

The extent of the electrical works associated with the proposed main facility can be summarised as follows:

- Provision of new transformer, HV switchgear and cabling
- Provision of Service Main cabling
- Provision of Main Switchboard (MSB)
- Provision of Distribution Boards (DBs)
- Provision of Sub-main cabling
- Provision of cable support & access systems
- Provision of sub-circuit cabling
- Provision of internal & external luminaires and lighting controls.
- Provision of exit and emergency lighting.
- Provision of general-purpose power and special purpose power systems including accessories and connections to equipment.
- Provision of Incoming Telco cabling
- Telecommunications structured cabling systems.
- Access control & CCTV systems.

5.3 Services Reticulation

5.3.1 External:

The incoming power supply that will serve the development shall be routed across the new proposed site to the proposed location of the transformer on attached sketches.

The incoming Telco cabling (fibre) for the building shall enter the site via an underground ducting system and into the building, this shall be routed from the existing Events Centre building to the new building. Site investigations are required in the next design stage to locate the cable route and methodology for this connection. The new connection shall enter into a dedicated communications room within the new building.

5.3.2 Internal:

Sub main cables shall originate from the MSB and be routed to the DB's and Connection Panels (CP's) as required. The sub main cables shall be installed on cable tray within the designated services riser above the MSB and within the ceiling space. Major sub-circuit routes shall also be complete with cable tray systems.

Primary cable routes for Ancillary Services such as Communications Structured Cabling System and CCTV Systems shall be installed on cable tray located within the ceiling space and risers

The horizontal reticulation of other electrical and ancillary services within the ceiling space shall be supported on Catenary Wire Systems.

All cable runs shall be concealed. Vertically all cabling shall be routed within the wall framing or in conduits within concrete panels.

All surface mounted conduits (at any height) shall be provided as Galvanised Steel complete with metallic saddles within the court area to pride maximum impact protection from ball sports.

NB: Telecommunications and CCTV cabling shall be segregated from Mains Power cabling (minimum 300mm for run lengths of greater than).

5.4 Point of Supply

A new HV connection is intended to be taken from the existing HV cabling that serves the existing Events / Aqualand Centre. This connection is proposed to be located adjacent to the new Events Centre, incorporating below ground cable joints. This connection will require a shutdown of the mains power to the existing events centre for a period, allowance should be included in the project for provision of a temporary generator to be provided to maintain existing site operations.

The new transformer and HV switchgear is proposed to be maintained and operated by Aurora Energy. This has been discussed with Aurora Energy through the Concept Design Phase.

The LV Service Main Cable shall be routed below ground from the proposed transformed location to the main switchboard within the building.

5.5 Incoming Supply Requirements

The calculated preliminary maximum demand is estimated at 510 amps/phase. This will be confirmed during the Developed and Detailed Design phase when the final Mechanical Services Loads have been determined.

5.6 Main Switchboard, Distribution Boards & Power Connection Panels

The attached sketches identify the location of the Main Switchboard (MSB), Distribution Boards (DBs) & Power Connection Panels (CPs) on the ground floor

The main switchboard (MSB) shall incorporate the buildings main point of isolation, and distribution equipment, surge protection, energy trader metering and controls equipment. The MSB shall be an internal quality floor standing, front entry, metal clad cubicle housed within a dedicated cupboard.

The MSB shall be an internal quality floor standing, front entry, metal clad cubicle type board.

The MSB shall incorporate the protective devices, metering and controls and an integral distribution board complete with the necessary Miniature Circuit Breakers (MCB's) and controls to serve the building's local area.

Distribution boards shall generally be metal clad and complete with lockable front doors.

Connection panels shall be lockable wall mounted panels providing minimum 1no. 63Amp three phase, 2no. 32Amp three phase, and 4no. 15Amp single phase power outlets. The panels shall be completed with internal distribution board rated to 125Amps. These panels shall be exterior IP rated and located on exterior walls as indicated on drawings to provide power to

external equipment (trailers etc) required in event overlays. In later design stages the expected electrical equipment load for event overlays is to be confirmed by an events specialist to further refine the minimum requirements of Power Connection Panels (CPs).

5.7 Check Metering System

A Check metering system will be provided that is compatible with the BMS. Check meters shall be provided for the following:

- Supplies to all distribution boards
- Supply to mechanical services
- Future PV allowance
- Supplies to Power Connection Panels

5.8 Standby Diesel Generator

A permeant standby diesel generator is not proposed to be provided as part of this project, however a external wall mounted temporary generator connection panel shall be provided to allow future connection of a generator in a power outage event. The main switchboard shall also incorporate a changeover switch, and the BMS shall have the capability of reducing the electrical load of the mechanical system when operating on generator power (with user intervention).

The attached sketch drawings indicate a proposed external generator location to the south end of the building.

5.9 Spatial Requirements

Refer below and to the attached sketch drawings for the minimum spatial requirements and locations for the various electrical & IT services spaces, and initial proposed locations for the transformers, temporary generator connection panel.

Note: Distribution board sizes are approximate, final sizes will be determined during detailed design

5.9.1 Main Switchboard (MSB)

Location	Size (mm)	Maximum cabinet door size
Ground Floor	2700w x 400d x 2100h	600mm

5.9.2 Distribution Boards

Location	Size (mm)
DB.1 – Electrical Switchroom	1250w x 2000h x 250d
DB.2 – Reception Area	1250w x 2000h x 250d
CP.x – Power Connection Panels (multiple)	600w x 1500h x 250d
DB.C – Communication room	500w x 1200h x 250d

5.9.3 Transformer, HV Switchgear, Generator Connection Panel

External Transformer & High Voltage Switchgear	
Dimensions (overall)	Refer detail sketch attached
Notes	Access via a hi-ab truck Mounted on-grade

External Generator Connection Panel	
Dimensions	1250w x 2000h x 250d
Notes	On-grade area adjacent to lay-down generator with access via a hi-ab truck

5.10 Cabling

Service main cables shall comprise a three phase supply with Aluminium conductors. The size of the Service-Main & Sub-main Cables shall be determined during the developed design phase. The electrical supplies to the Sub-Distribution Boards, Power Connection Panels and Mechanical Services Control Panel shall be reticulated via dedicated sub-main cables. Sub-main cables shall comprise three phase cables with copper or aluminium conductors.

All Sub-main cables shall be installed complete with Earthing Conductors.

All final sub circuit cabling within the building shall comprise either flat, or circular, multi-core TPS cabling

All external final sub circuit cabling shall comprise multi core neutral screen cabling.

Internally all sub-main cables shall be supported on system cable trays.

5.11 Lightning Protection

A risk assessment has been completed based on the AS/NZS 62305 calculation method. The input data includes the basis of sports facility high occupancy where a risk of panic exists, and using a flash density of 1 event per annum (data from New Zealand Ministry of the Environment 2000 to 2014 data set).

The risk assessment results do not recommend any lightning protection is required.

5.12 Earthing

The main earth shall consist of a driven earth system. The earthing system shall also connect to the primary structure metallic elements, including beams / supports, and slab embedded metallic reinforcement.

Earthing arrangements shall comply with the requirements of AS/NZS 3000.

5.13 Energy Management System

No specific energy management system is proposed, however the BMS shall be configured to allow reduced load in event of operating on generator power.

5.14 Photovoltaic systems

A conventional PV system installation is not proposed as part of the project. However we understand the client may have intent to provide a photovoltaic (PV) installation under a Power Purchase Agreement (PPA) arrangement. Under this model, a third-

party solar provider is responsible for the design, financing, installation, ownership, operation, and maintenance of the PV system. The client provides suitable roof or site space for the installation and purchases the electricity generated by the system at an agreed tariff for the duration of the agreement.

A PPA structure offers the benefit of obtaining on-site renewable energy generation with little or no upfront capital expenditure. The solar provider recovers its investment through the ongoing sale of electricity generated by the system, while the client typically benefits from reduced electricity costs relative to grid-supplied electricity. Depending on the commercial arrangement, the provider may also retain responsibility for monitoring system performance, maintenance, equipment replacement, and regulatory compliance throughout the agreement term.

A concept level assessment has been completed to provide some high level understanding of a potential PV system, please refer to appended report for details, noting this includes a number of financial assumptions to be confirmed in later design stages as a more detailed analysis.

Whist Stantec are not directly inputting to the decision process, however we offer the following advice and considerations in relation to this proposal.

5.14.1 Advantages

- Minimal or no upfront capital expenditure.
- Immediate access to on-site renewable energy generation.
- Reduced maintenance and asset management obligations for the client.
- Predictable energy pricing and reduced exposure to future electricity price increases.
- Transfer of system performance and maintenance risks to the PPA provider.
- Ability to progress sustainability and carbon reduction objectives without direct ownership of the asset.
- Potential preservation of capital for investment in core business activities.

5.14.2 Disadvantages and Risks

- Reduced flexibility to undertake future roof works, building extensions, or redevelopment due to third-party ownership of the PV system.
- Limited control over equipment selection, future system modifications, and operational strategy.
- Contractual energy pricing arrangements may become less favourable if electricity market prices decrease or if future solar technologies become significantly more cost-effective.
- Grid tariff, regulatory, or electricity market changes may affect the anticipated financial benefits over the life of the agreement.

5.14.3 Considerations for later design stages

- Roof mounting requirements and water proofing requirements
- Roof access requirements may need to be reviewed and made safer (with hand rails, direct stairwell access etc)
- Loading considerations in structural design for additional equipment to roofs, including PV panels, wind loading, inverters and battery systems (if above ground level).
- Space for inverters, noting these can be provided internally or externally, however should be easily accessible for maintenance purposes. Inverters can generate considerable heat, as such any internal location may require cooling or additional mechanical ventilation.
- Space for potential battery systems. These can be provided internally or externally and shall require a defined location for installation. Large battery systems may require additional ventilation requirements, and review by fire engineering team as a potential ignition source.

5.15 Electric Vehicle Charging

No electric vehicle chargers are proposed as part of this project.

5.16 Luminaires & lighting

Luminaire types will be selected during the Developed and Detailed Design phases, in conjunction with the Client, Architect & interior designer.

It is envisaged that all luminaires will be LED light sources. Luminaires will be selected that are suitable for the environment they are installed in.

Lighting levels will be in accordance with standard design practice and in accordance with AS/NZS 1680:2006 Interior Lighting and AS 2560.2:2021 Sports Lighting guidance.

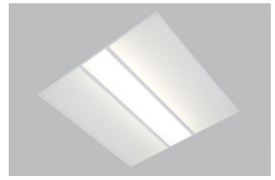
Design calculations shall be completed in the Developed Design stage in accordance with AS 2560.2:2021 section 2.9.3. For example luminaires shall not be located within 4m radius of baskets / rings (or luminaries in this location are to be non-operational if the basket is in this location (such as in show court event).

Location	Target Lighting Parameters
Show Basket Ball Courts	200lux Average Horizontal Illuminance @ 0mm AFFL 0.6 minimum uniformity (min/avg) @ 0mm AFFL 0.3 minimum uniformity (min/max) @ 0mm AFFL 50 UGR Max @ viewer height 4000K Color Temperature, >0.8 CRI
Standard Basket Ball Courts	500lux Average Horizontal Illuminance @ 0mm AFFL 0.7 minimum uniformity (min/avg) @ 0mm AFFL 0.5 minimum uniformity (min/max) @ 0mm AFFL 40 UGR Max @ 0mm AFFL @ viewer height 4000K Color Temperature, >0.8 CRI
Circulation spaces, toilets, showers, change spaces, plant rooms	160lux Average Horizontal Illuminance @ 0mm AFFL 0.3 minimum uniformity (min/avg) @ 0mm AFFL 4000K Color Temperature, >0.8 CRI
Multipurpose and studio spaces	350lux Average Horizontal Illuminance @ 0mm AFFL 0.5 minimum uniformity (min/avg) @ 0mm AFFL 4000K Color Temperature, >0.8 CRI
Meeting & Office spaces	350lux Average Horizontal Illuminance @ 750mm AFFL Meeting table: 0.7 minimum uniformity (min/avg) @ 750mm AFFL 4000K Color Temperature, >0.8 CRI

Location	Target Lighting Parameters
Stores & cleaners cupboards.	80lux Average Horizontal Illuminance @ 750mm AFFL 0.3 minimum uniformity (min/avg) @ 750mm AFFL 4000K Color Temperature, >0.8 CRI
Entry lobby / reception	160lux Average Horizontal Illuminance @ 0mm AFFL 0.3 minimum uniformity (min/avg) @ 750mm AFFL Desks / serving counters: 350lux Average Horizontal Illuminance @ 850mm AFFL Desks / serving counters: 0.7 minimum uniformity (min/avg) @ 850mm AFFL 4000K Color Temperature, >0.8 CRI

LED lighting is recommended by Stantec as the predominant light source. Stantec initial thoughts on possible light fittings includes:

Luminaire Description & Installation	Details	Image
Surface mounted or suspended impact resistant high power LED luminaire with wide optic. Long service life. Modular construction allowing various configurations. Dimmable and Casambi / DALI lighting control system compatible. Application: Basket Ball court lighting.	29-52klm 4000K 7yr Warranty L70 100,000 hrs IK08 impact resistance >80 Colour Rendering Index Example as Energylight (RZB) Light Case 2. Christchurch	
Circular recessed LED downlights. Dimmable and Casambi / DALI lighting control system compatible. Application: Circulation, change and WC areas.	4000K. IP54 from below, for wet areas and general to avoid dust ingress. 7yr Warranty >L70 50,000 Example as Switchlighting Commercial Downlight range. Nelson	
Surface mounted LED, Wall mounted (300mmØ). Application: Storage, Cleaners, Small Store.	4000K LED, IP54 environmentally rated 3yr Warranty Example as Switchlighting Oyster range. Nelson	

Luminaire Description & Installation	Details	Image
Surface mounted linear LED. Length = 1500mm. Application: Stores, Plant Room	4000K LED. 5yr Warranty IP65 environmentally protected. Example as Visonary Technologies Kratos Batten range. Christchurch	
Recessed troffer. Dimmable and Casambi / DALI lighting control system compatible. Application: Office, Staff, Gym, Wellness Areas.	4000K LED, UGR <19, CRI >90, 10yr Warranty Example as Energylight Evala Range. NZ Made. Christchurch	

5.17 Lighting Control

Internal lighting shall generally be controlled via automated controls with local manual override capability.

Automatic lighting controls would be considered for infrequently used or transient spaces such as stores, cleaners rooms, toilets, changing rooms. Later stages of design shall consider long time delays or sensitivity to movement in cubicles.

Automatic lighting controls would be considered for plant spaces to prevent lighting from being left operational. Due to safety concerns in plant spaces, long time delays would be proposed before any lighting automatically shuts off due to no detection of motion. Further lighting controls could be considered in these spaces with ample natural lighting to dim artificial lighting where natural lighting is sufficient.

Automatic lighting controls would be considered for entry / lobby / reception spaces, including time schedule control (generally on in business hours) and presence detection in out of hours periods for security lighting. Further lighting controls could be considered in these spaces with ample natural lighting to dim artificial lighting where natural lighting is sufficient. The reception area will include a touch lighting control panel to override all lighting within the facility.

Studio and multipurpose spaces are proposed to be provided with automated lighting controls primarily for absence detection, automatically turning off lights if spaces are unoccupied for a period of time. Local manual override controls would be provided to allow lighting to be dimmed in these spaces, and group control provided to allow flexible use of the space.

Courts area lighting control is proposed to be generally automated utilising a system such as Casambi. This type of control system allows full flexibility of control with the lighting, allowing change of lighting scenes from general use for show court, to conference space functions as needed. The added benefit of a Casambi system is that this allows control of individual fittings via an open source mobile device app. The controls are intuitive and site operators can be trained in its use, potentially limiting need to engage a systems integrator for temporary adjustments.

A lighting control system shall be included (Casambi is recommended, however Dynalite, C-Bus or KNX are alternative DALI systems) for the areas above for scene and dimming control

A combination of daylight sensor and timer control is proposed for exterior lighting generally. Carpark lighting may consider smart lighting, utilising movement sensors during out of business hours periods, and dimming to lower level (as opposed to running off) to maintain a safe environment. Dimming of luminaries reduces energy use, and also reduces artificial lighting impact to the local eco systems.

Light switches generally shall be of the standard white plastic type, generally with retractive / spring return switch type for interface wit the lighting control system:



Light switches within the courts area (where required, however generally to be avoided in lieu of controls by scene selection plates external to the courts), shall be minimum IK10 impact protected, such as the Legrand Soliroc range:



An IK10 rated device can withstand 20 joules of impact, which is equivalent to the force of a 5 kg mass dropped from 400 mm above the surface. IK10 is the highest level of tested impact protection available.

5.18 Emergency Lighting

An Emergency Lighting System shall be provided subject to, and in line with, the recommendations of the Fire Report. Emergency Lighting System shall be provided in accordance with AS/NZS 2293 and include the provision of emergency luminaires and illuminated ‘exit’ signs.

The system proposed would be a single point system utilising self-contained luminaires and signs.



The Emergency Lighting system shall be a fully monitored type to minimise maintenance labour required for general inspections & testing.



5.19 External Lighting

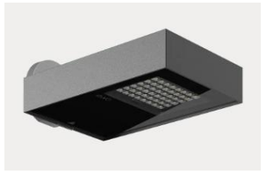
External Lighting shall be provided site wide on roadways, paths and car parks etc.

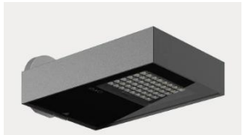
The extent and final design shall be agreed with the Client, Architect and the Landscape Architect.

Target Lighting Parameters:

- Exterior carpark lighting during event to AS/NZS 1158 type P11a (high night time occupancy and medium crime risk), 14lux average, 3 lux minimum point horizontal illuminance, minimum 10 unifomity ratio, 3lux minimum point vertical
- Exterior carpark lighting outside of event to AS/NZS 1158 type P11c (low night time occupancy and low crime risk), 3.5lux average, 0.7 lux minimum point horizontal illuminance, minimum 10 unifomity ratio.
- Accessible parking bays shall be designed to achieve minimum 14lux point horizontal
- Main entrance area and walkway lighting to achieve AS/NZS 1158 type P1 requirements as a minimum, however for consistency, primary pathways from carpark to entrance area to generally match carpark lighting levels (as noted above). P1 parameters: 7 lux average horizontal, 2lux minimum point horizontal, minimum 10 uniformity ratio, 2 lux minimum point vertical.
- Perimeter service road way exterior lighting is anticipated to be infrequent use, as such no AS/NZS 1158 lighting category is proposed to be applied to this area. Proposal to provide security lighting only, achieving 2 lux average from building mounted lighting with minimum 10 uniformity ratio. CCTV cameras to this area to be complete with night vision capabilities.
- All lighting to be minimum 3000k with low blue component to reduce impact on local eco systems.
- Exterior lighting design to be in accordance with QLDC Southern Light Standards & specifications
- Minimum IK10 impact protection to reduce damage from vandalism attacks. An IK10 rated device can withstand 20 joules of impact, which is equivalent to the force of a 5 kg mass dropped from 400 mm above the surface. IK10 is the highest level of tested impact protection available.

Luminaire Description & Installation	Details	Image
Column mounted LED carpark luminaire. Black powder coated straight Aluminum lighting columns to 4-6m tall. Maximum 5 degree incline in accordance with QLDC guidance.	LED – Long life Minimum 5yr Warranty Variable optics to achieve minimum back spill to areas outside of carpark 3000K maximum color temperature, to minimize environmental impacts Consideration of integrated smart movement sensor controls. IK10 impact protection from vandalism	 Energy light EWO

Luminaire Description & Installation	Details	Image
Wall mounted luminaires, generally to main entrance / exit locations. To be located in easy to access areas (not above planters etc).	LED – Long life Minimum 5yr Warranty 3000K maximum color temperature, to minimize environmental impacts Consideration of integrated smart movement sensor controls. IK10 impact protection from vandalism	  Energy light EWO
Ground mounted downward only bollard lighting for pedestrian pathways	LED – Long life Minimum 5yr Warranty 3000K maximum color temperature, to minimize environmental impacts Consideration of integrated smart movement sensor controls. IK10 impact protection from vandalism	 Energy light EWO
Recessed Ceiling Downlights for areas with canopy / soffit above.	LED – Long life Minimum 5yr Warranty 3000K maximum color temperature, to minimize environmental impacts Consideration of integrated smart movement sensor controls. IK10 impact protection from vandalism	 Erco IKU
Column mounted LED carpark luminaire. Black powder coated straight Aluminum lighting columns to 4-6m tall. Maximum 5 degree incline in accordance with QLDC guidance.	LED – Long life Minimum 5yr Warranty Variable optics to achieve minimum back spill to areas outside of carpark 3000K maximum color temperature, to minimize environmental impacts Consideration of integrated smart movement sensor controls.	 Energy light EWO

Luminaire Description & Installation	Details	Image
	IK10 impact protection from vandalism	
Wall mounted luminaires, generally to main entrance / exit locations. To be located in easy to access areas (not above planters etc).	LED – Long life Minimum 5yr Warranty 3000K maximum color temperature, to minimize environmental impacts Consideration of integrated smart movement sensor controls. IK10 impact protection from vandalism	  Energy light EWO
Ground mounted downward only bollard lighting for pedestrian pathways	LED – Long life Minimum 5yr Warranty 3000K maximum color temperature, to minimize environmental impacts Consideration of integrated smart movement sensor controls. IK10 impact protection from vandalism	 Energy light EWO

5.20 General Power Outlets

General purpose socket outlets shall be provided where required. Socket outlets shall be 10 amps rated, shuttered, switched socket outlets.

Typically power outlets shall be provided as standard white plastic:



Outlets located within the courts areas shall be of minimum IK10 impact protected, the impact protection shall include both the face plate, and any mounting blocks. Example of such systems available on the market include the Legrand Soliroc rage:



An IK10 rated device can withstand 20 joules of impact, which is equivalent to the force of a 5 kg mass dropped from 400 mm above the surface. IK10 is the highest level of tested impact protection available.

The additional provision of USB charging outlets will be discussed during the developed and detailed design stages.

Heavy Duty floor boxes containing minimum 4no. 15Amp Single Phase, 2no. 32Amp Three phase and 1no. 63Amp Three phase outlets shall be provided on all sides of all courts within the courts (outside of playing areas). Each shall have a maximum capacity of 63Amps three phase (approx. 43kW) and are intended to be used for events. Lid design shall incorporate a level of water ingress protection suitable for anticipated floor cleaning operations. The following example image depicts an example custom manufactured floor box arrangement that may be considered for further design development. It should be noted that these are expected to be of premium cost for custom manufacture. In later design stages the expected electrical equipment load for event overlays is to be confirmed by an events specialist to further refine the minimum requirements of floor boxes.



Specific power requirements shall be provided for all electrical appliances and equipment such as:

- Kitchen Equipment
- Fridges and Freezers
- Water Boilers
- Hand driers
- Storage room ride-on cleaning equipment charging
- Fire Alarm Panel
- Electric court divider screens
- Audio Visual Equipment
- Retractable seating

5.21 Electric Underfloor Heating

Electric underfloor heating systems are to be provided to shower areas to minimise slipping risks due to wet floors. Systems shall be provided below tile installations, and controllers will be located in staff only access areas. Controllers also to be interfaced with BMS systems for scheduled control.

5.22 Telecommunications

The building's main communications room shall be used to accommodate the network optical terminal & other central communications equipment.

It is noted that the Client's preferred supplier is Fusion/Nightlife for digital systems.

- Nightlife - internal advertising of gym, instructors, PT etc.
- Fusion - broader advertising, council advertisements, libraries etc. - centrally managed

The telecommunications design for the development shall be in accordance with the requirements of the following codes & regulations incorporating the latest revisions and all amendments:

- AS/NZS 3080
- AS 3084: 2003
- AS/NZS 3085.1
- ISO/IEC 11801

Sufficient space will be provided for 2 No 800mm x 800mm, 47RU racks (refer to electrical sketch drawings for location for the incoming communications room). Racks shall include space for active equipment, fibre distribution, IPTV head end equipment, PABX, CCTV DVR & rack mounted UPS.

Back bone cabling shall consist of 12 core single mode fibre optical cabling between the main fibre distribution frame and the satellite communications cabinet.

Due to the building size a satellite communications cabinet shall also be provided within the Electrical Switchroom to service communications requirements in this area.

The Developed Design stage shall include heat mapping of wireless access points to ensure coverage throughout of suitable capacity to serve the expected occupancy.

Category 6a UTP copper cabling shall be reticulated from the Distribution frames to final outlets including:

- Telephone handsets
- Hardwired network points
- Wireless access points
- IPTV
- Distribution equipment
- CCTV locations

5.23 Active Equipment

All active equipment will be provided and installed by the Client and is not part of this scope of works.

5.24 Wireless Access Points

Wireless access data connection points shall be provided throughout the building (Routers provided by client).

5.25 IP TV Systems

An IPTV system may be employed by the Client on completion of the project. The project shall include passive cabling to all TV locations, routed back to the main communications room (via satellite cabinets where necessary).

No roof mounted satellite system or terrestrial TV aerials are anticipated.

Locations of all outlets will be determined during the Developed Design phase.

5.26 Audio Visual Cabling System

It is noted that NZ Sound and Vision are QLDCs preferred supplier, and currently provide existing systems.

Any new systems shall be compatible with existing arrangements.

Noted existing digital signage / screen systems are provided by Nightlife

It is anticipated that audio visual wiring systems would be provided in the following areas:

- Reception / café
- Studio rooms
- Multifunction room

Within each of these spaces' facilities would be pre-wired for the connection and integration of TV monitors where required. Further details will be discussed during the developed/detailed design and following discussions with the Client, such as integrated music systems.

Music systems associated with the spaces are expected to be wired from the local incoming communications room, where amplifiers / media players will be located. Specialist AV designer to advise further during next design phase. Systems within each room are to be independently controllable via wireless controls.

5.27 Background Music System

Background music systems are not proposed for the project to areas outside of those noted in section 5.26 above.

5.28 Access Control / Intruder Detection / CCTV Systems

The security systems shall consist of the following:

- Access Control
- CCTV

The access control throughout the building shall be a RFID system, with potential for use of mobile device apps to gain access to the facility and/or specific spaces. The system shall also record and report usage data.

Access control will be provided to control independent access to multi-function spaces from the main facility, to allow use of these areas on an separate basis.

A CCTV System shall be provided throughout the building for constant surveillance of the following areas, or other areas as deemed necessary by the Client:

- Entry Point to the property (vehicular) and final exits
- Car Parking
- Lobby/Lounge
- Reception
- Public areas
- Staff Entrance
- Reception / Café areas
- The CCTV system shall be network based camera system with IP cameras and centrally located network video recorder.

5.29 Cable Trunking (to be confirmed)

It is envisaged that a cable trunking system may be included in the reception joinery, and also to health and studio spaces to provide power to perimeter equipment. This is to be further discussed with the architect during the developed/detailed design phase of this project.

5.30 Hearing Augmentation System

A mobile Hearing Augmentation system is expected to be provided within the reception area joinery.

Each system shall consist of RF antennae within the reception joinery.

5.31 Uninterruptible Power Supplies (UPS)

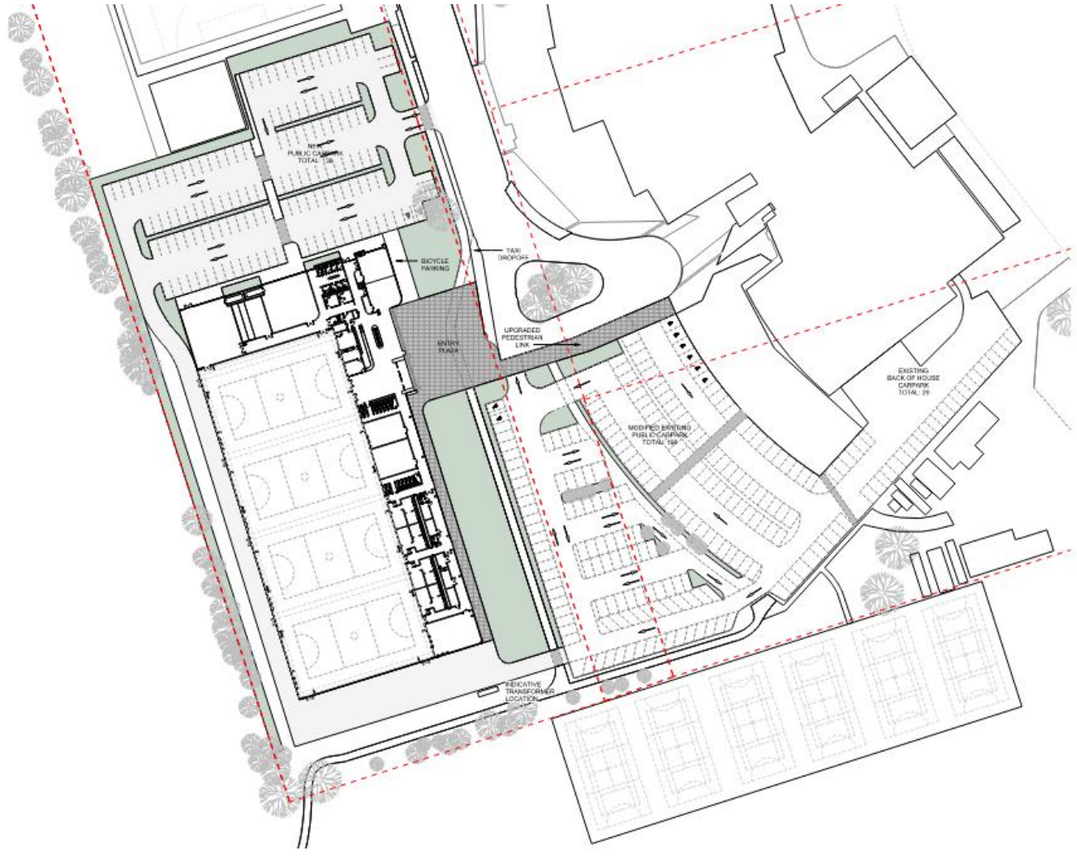
It is assumed that a UPS will not be required for the development, and that equipment deemed 'critical' will be served via local UPS systems or integral battery back-up power supplies for minimum autonomy.

7 Fire Engineering

7.1 General

This report outlines the concept design for Fire Engineering and Fire Protection Services for the proposed new Queenstown Events Centre (QEC), located at Joe O'Connell Drive, Queenstown. This report refers to the drawings prepared by Jasmax titled "Queenstown Events Centre Concept Design Backgrounds" (as issued 7 August 2026, project no. 215101), and associated design team meetings. The development comprises a new four-court events centre and supporting services, with a show-court configuration capable of accommodating just over 2,000 people for sporting and community events with the fire design not allowing for any exhibition space use or similar

NZBC Acceptable Solutions C/AS2 permits event centres with an occupant load of up to 2,000 people, alongside compliance with other prescriptive means of escape requirements such as seating arrangements, aisle widths, walkway widths, and related provisions. As confirmed by the client, the maximum proposed design occupancy is 2,100 people. Currently the seating arrangement and associated aisle and walkway widths do not comply with the prescriptive requirements of the NZBC Acceptable Solutions. Accordingly, the fire design will need to proceed under NZBC Verification Method C/VM2 with associated mechanical smoke control unless the maximum design occupancy is kept below 2,000 people.



The Primary Risk Group is defined as public ("CA"), noting that there are no sleeping spaces in the building. The Importance Level for the design of the building is "IL3", as confirmed by the client. There is to be no Unit Titling or separate building ownership for any of the parts of the building, with the building sitting on a larger site title shared with the existing Recreational Centre. The closest site title boundary is understood to be to 11.6m to the west of the facing external wall.

The Fire Engineering Design will be in accordance with the minimum requirements of the NZBC C-Clauses "Protection from Fire". As previously mentioned, the base reference is the alternate design methodology NZBC C/VM2, with fundamental principles taken from NZ Building Code Acceptable Solutions (C/AS2). NZBC Clauses F6-F8 are also referred to with regards to emergency lighting, signage and fire alarm systems.

The Fire Protection Systems shall be designed in accordance with all NZBC Requirements with special reference to the relevant New Zealand Standards in particular but not limited to:

- NZS 4541:2020 Sprinkler Standard
- NZS 4512:2021 Fire Detection and Alarm Standard and AS 2220 for alerting
- NZS 4503:2005 Hand-held Fire Fighting Equipment Standard
- AS/NZS 2293.1:2018 (Emergency Evacuation Lighting for Buildings)
- AS 1668.1:2015 – Fire and smoke control in buildings

All Standards shall be the latest revision incorporating all amendments, unless otherwise referred to the design or NZ Building Code approved documents.

This Concept Design Report addresses minimum fire safety requirements only, as determined by the NZBC. It does not consider loss control for the building and contents, unless specifically referenced.

The following aspects of the Fire Design Advice are highlighted:

- An adequate water supply to sprinkler systems is expected to be provided from the towns main, designed and documented by the Civil engineer.
- The sketches indicate three FENZ Attendance Points and fire truck access areas. These need to be finalised and confirmed by FENZ as part of the next phase of design, including turning circles, clearance heights and carriageway laden weights.
- The building is required to have sprinkler protection, including a sprinkler valve room.
- We understand that the site and all buildings will be on a single title, with no unit titles or subdivision proposed.
- Specific details for any smoke control systems, HVAC shut-down requirements, Building Management System (BMS) interfaces, and smoke control within distributed ventilation systems is to be provided by the Mechanical Engineer. Fire system interfaces at the Fire Alarm Panel will be specified by the Fire Protection Engineer.
- Emergency lighting and illuminated Exit signage provisions are documented by the Electrical Engineer. Refer indicative coverage on fire sketches.
- Nominated fire ratings have been shown on the concept design sketches. As part of the next phase of the project associated design development advice would be passed to the structural engineer and Architect for their design development of the structural systems, floor/wall elements, and external façade for all buildings.
- Building security – All doors will need to be openable from the direction of escape in the event of a fire or other emergency. Security on some doors may need to be interfaced to the fire alarm system to release on fire call – these doors will be identified after we are advised of the proposed door security features and hardware.
- Egress route features i.e. door hardware, panic fasteners, egress route dimensions etc. are to be covered by the Architect. The Fire Engineer will undertake a strategic review of the architectural documentation for design intent and alignment with the fire strategy.

7.2 Fire Protection Services

7.2.1 General

This section covers the Fire Protection Services Systems for the development with services designed and installed to comply with the requirements of the current NZ Building Code and relevant NZ Standards.

Note that all sizes, quantities and capacities used as the basis of this report are preliminary based on the information available and may be subject to change during the developed and detailed design phases.

7.2.2 Fire Sprinkler System

A sprinkler system complying with NZS 4541:2020 is proposed to be installed in the Events Centre building.

A single set of fire sprinkler control valves can serve multiple buildings up to a total floor area of 11,000 m^2. We have proposed one set of 100 mm diameter control valves are proposed to be co-located with a fire sprinkler inlet (FSI) in the Sprinkler Valve Room (SVR). The fire alarm indicator (mimic) panel is proposed to be located at the SVR also - preliminary approval of the FSI, FAP and mimic panel locations is yet to occur with FENZ. This FSI and fire indicator panel location needs to be in a prominent location that can be accessed by a FENZ vehicle.

Offices are classified as 'extra light hazard' (ELH), Gym, meeting rooms and kitchen spaces are classified as 'ordinary hazard 1' (OH1), plant rooms are classified as 'ordinary hazard 2' (OH2) and Sports Hall as 'ordinary hazard 3' (OH3). The maximum sprinkler demand (in regards to flow rate) is based on the OH3 classification.

The greatest demand for the sprinkler system is expected to be 550 kPa at 1500 L/min (based on OH3 hazard classification). The town main in Joe O'Connell Drive is expected to be able to supply this, so a sprinkler pump set is unlikely to be required although a flow test should be carried out to confirm during the next phase of design.

For sprinkler protected buildings, sprinklers will need to be installed throughout all areas of the building except in concealed partitioned spaces less than 800 mm with no combustibles (other than single non-bundled electrical cables and non-combustible pipes).

Due consideration to the very cold climate in Queenstown is needed if any sprinkler elements are within an ambient environment such as beneath external canopies. It is assumed that the building and roof space will be maintained at a temperature above 4 deg C at all times to ensure the water in the pipe work does not freeze.

7.2.3 Fire Alarm System

Automatic smoke detection is proposed to be installed throughout the Queenstown Events Centre building except where susceptible to false alarms. This is expected to be a 'Type 4' system to NZS 4512:2021 with interconnected smoke detectors, manual call points and sounders. If a Type 4 smoke detector activates then there is sounder activation throughout the entire building resulting in a complete evacuation.

7.2.4 Smoke Control

Based on preliminary assessments to date, it is anticipated that a smoke extract system will be required given the high design occupancy (i.e. > 2,000 people) in the showcourt including tiered seating 15 rows high. At this stage, we recommend allowance for a 60m^3/s roof mounted smoke extract with associated make-up air and control systems. This is to be further developed in the next design stage including a closer assessment of evacuation times and what impact that has on required smoke extract volumes.

7.2.5 Fire Alarm Panel

A fire alarm control panel will be required for location in or adjacent to the sprinkler valve rooms. The fire alarm display panel is to be located on an external wall near to the building entrance in a location to be approved by Fire and Emergency NZ.

7.2.6 Alerting System

Sounders are required throughout the buildings to comply with NZS4512:2021 and AS2220.

7.2.7 Building Hydrant System

We do not believe that a Building Hydrant system is required at this stage based on the proposed FENZ attendance points, with the hose run length being within 75m from the assumed fire truck positions. Formal approval of the attendance points is yet to be agreed with FENZ – to be confirmed during the next design stage.

7.3 Fire Compartmentation

7.3.1 Fire Ratings

This Concept Design Fire Report is based on the Fire Resistance Ratings aligned to calculated burn-out times as referenced in NZ Building Code C/VM2 document for this building design. The fire resistance rating will be further assessed during developed design once fire modelling progresses.

The East wall of the new QEC faces adjacent land titles which are understood to be under QLDC ownership. As these are separate legal site titles there will either need to be a "no build" encumbrance for the portion of land on these adjacent titles to avoid any spread of fire risk, or the titles amalgamated. This will be further assessed as part of the next stage of design where there may be an outcome that the 11.6m set back distance is adequate for a 100% unrated external west wall.

The North of the building is remote from the relevant boundary, the West wall is facing the Frankton Golf course, while the South wall is facing the neighboring Golfcourse / Queenstown Airport site. All walls are remote from all relevant property boundaries, i.e. greater than 9m separation distance (based on a FLED between 400 – 800 MJ/m^2 for the sprinkler protected building), allowing for all walls to be fully unprotected and not requiring any fire rating.

With regards to firecells within the new building, given that it can be shown through the use of C/VM2 that tenable conditions can be maintained for the time required for safe escape, then we do not anticipate any internal fire separations.

The general fire-rating considerations that apply to the building are as follows:

- There are specific requirements for Transformers which are commonly required by network utility operators with reference to the relevant Standard. As a general rule, all building elements within 6 m of the Transformer will need to be two-hour fire-rated. Further advice will be provided in the next phase of design once Transformer locations and sizes have been confirmed.
- As the building is to be fully sprinkler protected there is no expectation for an "insulation" rating in the fire ratings. Fire rated partitions are to be (* / * / - $_{Sm}$) where * is the designated fire rating, while non-structural elements are (- / * / - $_{Sm}$).
- The structural design will need to account for the structural fire stability of the designated fire rated walls and floors, including for post-fire structural stability requirements of NZBC Clause B1.
- Any penetrations made through fire rated construction needs to be appropriately sealed to maintain the required fire rating.

7.3.2 Fire Treatment for External Cladding

There are specific fire performance requirements for external cladding systems for buildings that are within 1.0 m of a relevant boundary, and buildings that are taller than 10.0 m (measured from the lowest floor level to the top of the highest roof). Although all external walls of the new QEC building are greater than 1.0m from the relevant boundaries, the walls have a height greater than 10m and are required to meet the requirements of a "Type A" performance criteria for the cladding system under certified test conditions:

- Peak Heat Release Rate - 100kW/m^2
- Total heat released – no greater than 25MJ/m^2

Where specific fire performance requirements apply, cladding systems need to have been specifically tested in accordance with NZ Building Code requirements, and will need to be detailed (by the Architect) to be installed as per the manufacturer's instructions and in strict alignment with the configuration of the fire-tested system. Specific advice in regards to the fire test Standards that apply and the performance criteria will be provided in the preliminary design phase.

7.3.3 Protection of Structural Steel

Structural steel may require supplementary protective coating systems to achieve the minimum fire ratings if required for this project. These can typically be either intumescent paint, cementitious coating systems, or enclosing the steel in fire-rated board system (e.g. GIB Fyreline). There are advantages and disadvantages with both coating options including generally higher supply costs for intumescent paint but more stringent application conditions versus susceptibility to damage for cementitious

coating systems. The Architectural preference for exposed steel is usually intumescent paint for aesthetic purposes. A specific review should occur during the detailed design phase to recommend a preferred solution.

With intumescent based protection systems care is needed in selecting compatible undercoat and topcoat systems to the intumescent paint. Also, the limiting temperature of the steel for the fire condition needs to be determined and the minimum wet film thickness (WFT) and dry film thickness (DFT) for each member requiring treatment. For any coating system there needs to be independent site testing and approval of final results as part of the compliance documentation.

Fire-rated protection of structural steel is to be documented by the Architect or Structural Engineer. The Fire Engineer will provide strategic advice regards fire separation locations and required fire resistance ratings (FRRs).

7.4 Means of Escape

Based on current information an occupancy table has been prepared and attached as Section 7.5. The number of occupants proposed within each space is to be agreed among the stakeholders.

7.4.1 Number of Escape Routes

Minimum number of escape routes from C/AS2 has been provided as guidance. The compliance of the means of escape from the building is to be assessed in preliminary design. The number of escape routes provided with the concept design sketches are seen to meet these requirements.

Table 3.1 (C/AS2, CA Risk Group) – Minimum number of escape routes

Number of occupants	Minimum number of escape routes
Up to 500	2
501 to 1000	3
1001 to 2000	4
2001 to 4000	5

A single escape route is allowed for areas with no more than 50 people.

7.4.2 Height and Width of Escape Routes

- As a guide, the total combined width of all available escape routes should allow 7 mm/person for horizontal travel and 9 mm/person for vertical travel, as per C/AS2. This is to be reviewed during the next design stage.
- The clear height through openings on egress routes shall be no less than 2100mm.
- Any door opening shall have a clear height of no less than 1955 mm.
- Door assemblies are typically able to reduce the width of an exitway by no more than 125 mm when the door is fully open. Handrails are able to reduce the width of a stair/corridor by no more than 100 mm when the door is fully open. No door leaf is to be less than 500 mm wide.
- Doors into ‘safe path’ stairs should generally provide a clear width of no less than 875 mm. Doors on open paths should generally provide a minimum clear width of no less than 760 mm. The actual clear widths need to match the design occupancy at 7mm/person.
- Vision panels are required on doors which:
  - Are hung to swing both ways,
  - Lead into, or are within, exitways, that swing in the direction of escape, or
  - Subdivide corridors used as escape routes.
- Exit doors need to be easily openable from the inside without the use of a key. Electromagnetic locks (if fitted) are to have a fail-safe ‘push to release’ installed adjacent to the door with appropriate signage as per F8/AS1.
- Points of exit for alternate routes to be defined as a ‘separate’ route need to be at least 8 m apart.
- Fire/Smoke doors are required to have magnetic hold open devices attached, usually controlled via local smoke detectors where there is a risk of being held open.
- Panic fastenings are required on doors with double leaves where potentially more than 100 occupants will queue to escape from a space. This will apply to all doors from the court area within the building.

7.4.3 Travel Distances

The compliance of the means of escape from the building with regards to travel distances is to be confirmed during the next design phases in accordance with either C/AS2 prescriptive fire engineering analysis or C/VM2 alternative fire engineering analysis. The sketches show the recommended escape routes with suitable separation with reference to NZBC C/AS2 requirements.

7.4.4 Way Finding

- Emergency lighting complying with NZBC F6 is to be provided where specifically required. This includes changes in level and where egress path travel distances exceed 20 m. Indicative coverage requirements are shown in the attached sketches. Emergency lighting will be provided for outside egress paths where people may need to use the route under darkness. Additionally, here is no compliant back-up power system for general lighting. Emergency lighting will be designed by the project Electrical Engineer, in coordination with the Fire Engineer.

7.4.5 Surface Finishes

Surface finish requirements for walls, ceilings, ducts and insulation are specified in the NZ Building Code as follows for the sprinkler protected buildings.

Surface Finishes, sprinkler protection

Location	Maximum Group Number
Wall lining in crowd spaces (i.e. public spaces)	3
Ceiling lining in crowd spaces (i.e. public spaces)	2
All other occupied areas (i.e. staff areas)	3
Ducts for HVAC systems internal surfaces	2
Ducts for HVAC systems external surfaces	3
Acoustic treatment and pipe insulation within air handling plenum	3

Flooring shall be either non-combustible or, when tested to ISO 9239-1, shall have a critical radiant flux of not less than that specified below for the sprinkler protected buildings.

Critical radiant flux requirements for flooring, sprinkler protection

Area of building	Minimum critical radiant flux when tested to ISO 9239-1
Firecells accommodating more than 50 people & all other occupied spaces	1.2 kW/m^2

Critical radiant flux requirements for flooring, sprinkler protection	
Area of building	**Minimum critical radiant flux when tested to ISO 9239-1**

These limitations apply to flexible finishes such as carpets, vinyl sheeting, tiles and unfinished floor surfaces.Table

Sprinkler protection allows for the use of innovative and aesthetic surface finishes such as untreated natural wood as wall linings.

Refer to MBIE published document 'Building Product Specification (BPS)' First Edition (2025) Part 8 for further information on acceptable methods for achieving surface finish Group Numbers. These surface finish requirements apply to new alteration works only and should apply to other existing areas during future refurbishments.

The BPS (2025) document sets out specifications and standards for building products in terms of their performance, manufacture, testing, installation, and maintenance. This is not a stand-alone document and should be read in conjunction with the NZBC Acceptable Solutions.

7.5 Occupancy

The table below summarises the preliminary design occupancy for each building, based on floor area and occupant densities given in the NZBC approved documents. The design values include possible double-counting of people and generally fill spaces to their capacity, whereas the proposed load are rationalised numbers and take into account number of seats shown or that some people have already been accounted for. Note that means of escape requirements/provisions will need to be confirmed after occupancy profiles have been established.

Level	Description	Risk Group	Occupant Density (m^2/P)	Floor Area (m^2)	Design Load (P)	Proposed Load (P)
G[a]	Courts	CA	3	3645	1215	2000[c]
	High Intensity	CA	5	227	46	46
	Cycle Studio	CA	5	89	18	18
	Low Intensity	CA	5	179	36	36
	Multifunction	CA	2.5	139	56	56
	Reception & Supporting Services	WB	10	96	10	10
	Meeting	WB	2.5	18	8	8
	Storage	WB	100	76	1	1
	Storage & Event Swing	WB	100	125	2	2
	Physio Rooms	WB	5	12	3 x 2	3 x 2
			Total for Ground Floor		***1398***	***2183***
L1	Plant Deck[a]	WB	100	93	1	-
	Health + Wellness Plant[a]	WB	100	89	1	-
			Total for Plant First Floor		***2***	**-**
			Building Total		***1400***	***2100***[d]

a. Occupant load for circulation corridors/stairs/lifts, Plant and Server Rooms are accounted elsewhere within the building. Refer attached sketches for Occupancy Numbers,

b. Note, that the occupant loads calculated above are solely for the purpose of the fire design and shall not be used for determining other requirements such as toilet numbers,

c. A proposed occupant load of 2000 people is used for the courts area, to account for the showcourt layout capacity during sporting and community events,

d. Maximum design occupancy as confirmed by the client (QLDC).

7.6 Key Decisions and Outstanding Design Items

The following list captures the main fire safety and protection system items that require further client direction or design development:

vi. Maximum occupancy numbers – the design is based on 2,100 maximum, which requires NZBC C/VM2 to be used. If the total number did not exceed 2,000 people then this could allow NZBC Acceptable Solution C/AS2 to be used with potential relaxations on smoke control requirements. The maximum design number and associated scenarios needs to be locked down as part of the next phase of design,

vii. Confirmation of land titles on and around the Event Centre site including owners – we need to check spread of fire to neighbouring risks alongside possible solutions,

viii. To date, preliminary fire modelling has been completed which has highlighted the risk of insufficient time for occupant egress before the smoke layer drops to the tiered seating height for the showcourt arrangement. This is to be further developed during the next design stages – refer to section 7.2.4 for initial smoke extract volume assessments,

ix. FENZ written approval to confirm attendance points for the site and into the buildings. Confirmation of any internal fire hydrant requirements as a result,

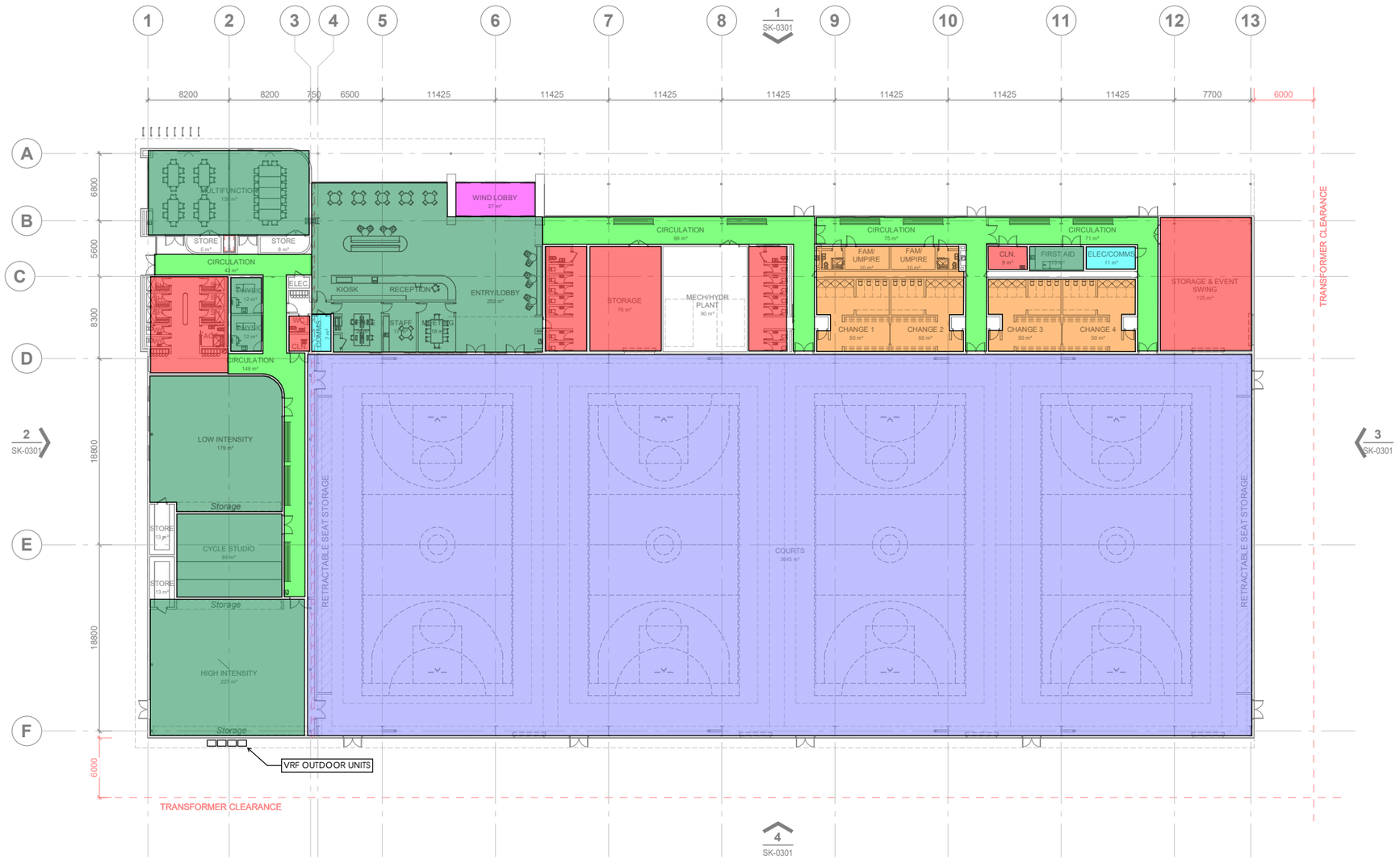
Appendix A

A.1 Mechanical Services Sketch Drawings

310701051-MSK01 – MECHANICAL SERVICES PROPOSED HVAC
310701051-MSK02 – MECHANICAL SERVICES SPORTS HALL HVAC CONCEPT
310701051-MSK03 – MECHANICAL SERVICES ROOF PLAN
310701051-MSK04 – MECHANICAL SERVICES CROSS SECTION

LEGEND

- EXHAUST VENT + MAKE-UP AIR (HEAT RECOVERY)
- HEATING (RADIANT + U/FLOOR), EXHAUST VENT + MAKE-UP AIR (HEAT RECOVERY)
- HEATING, OUTDOOR AIR SUPPLY VENT (HEAT RECOVERY)
- AIR CONDITIONING, OUTDOOR AIR SUPPLY VENT (VRV/VRF + HEAT RECOVERY)
- AIR CONDITIONING, OUTDOOR AIR SUPPLY VENT + SPILL AIR (AIR HANDLERS)
- COMMS ROOM COOLING AS REQUIRED (TBC)
- DOOR AIR CURTAINS IN WIND LOBBY



ISSUE	AMENDMENT	DATE
-	-	----

CHECK ALL INFORMATION ON SITE PRIOR TO COMMENCING WORK. READ IN CONJUNCTION WITH THE SPECIFICATION AND OTHER RELEVANT DRAWINGS AND DOCUMENTS

DRAWINGS TO BE PRINTED IN COLOUR

Stantec

PROJECT:
QUEENSTOWN EVENTS CENTRE PROJECT

ADDRESS:
33 JOE OCONNELL DRIVE
FRANKTON, QUEENSTOWN
9300

SHEET TITLE:
MECHANICAL SERVICES PROPOSED HVAC

CONCEPT

DESIGNED:	DATE:	ISSUE:
AM	16.07.2026	-
DRAWN: AM	SCALE @ A1: 1:500	

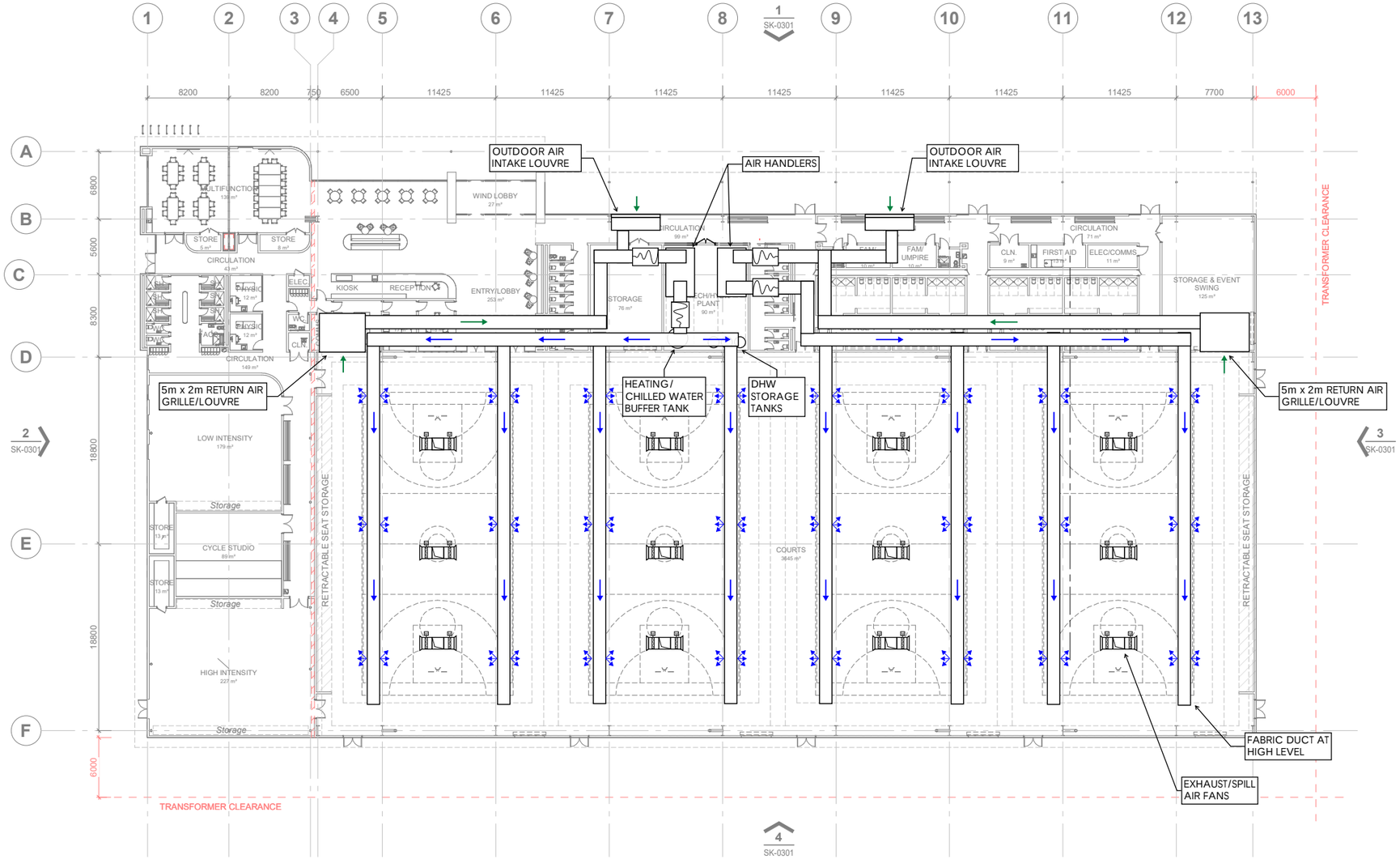
PROJECT No: 310701051

SHEET No: MSK01

Queenstown Events Centre

07/06/26 CLIENT: **QUEENSTOWN-LAKES DISTRICT COUNCIL** DRAWING **SINGLE STOREY - GROUND FLOOR PLAN** SCALE @ A1 **1 : 250** PROJECT No. **215101** DRAWING No. **SK-0101** REV.

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PROJECT:
QUEENSTOWN EVENTS CENTRE PROJECT

ADDRESS:
33 JOE OCONNELL DRIVE
FRANKTON, QUEENSTOWN
9300

SHEET TITLE:
MECHANICAL SERVICES SPORTS HALL HVAC CONCEPT

CONCEPT

DESIGNED: AM	DATE: 16.07.2026	ISSUE: -
DRAWN: AM	SCALE @ A1: 1:500	

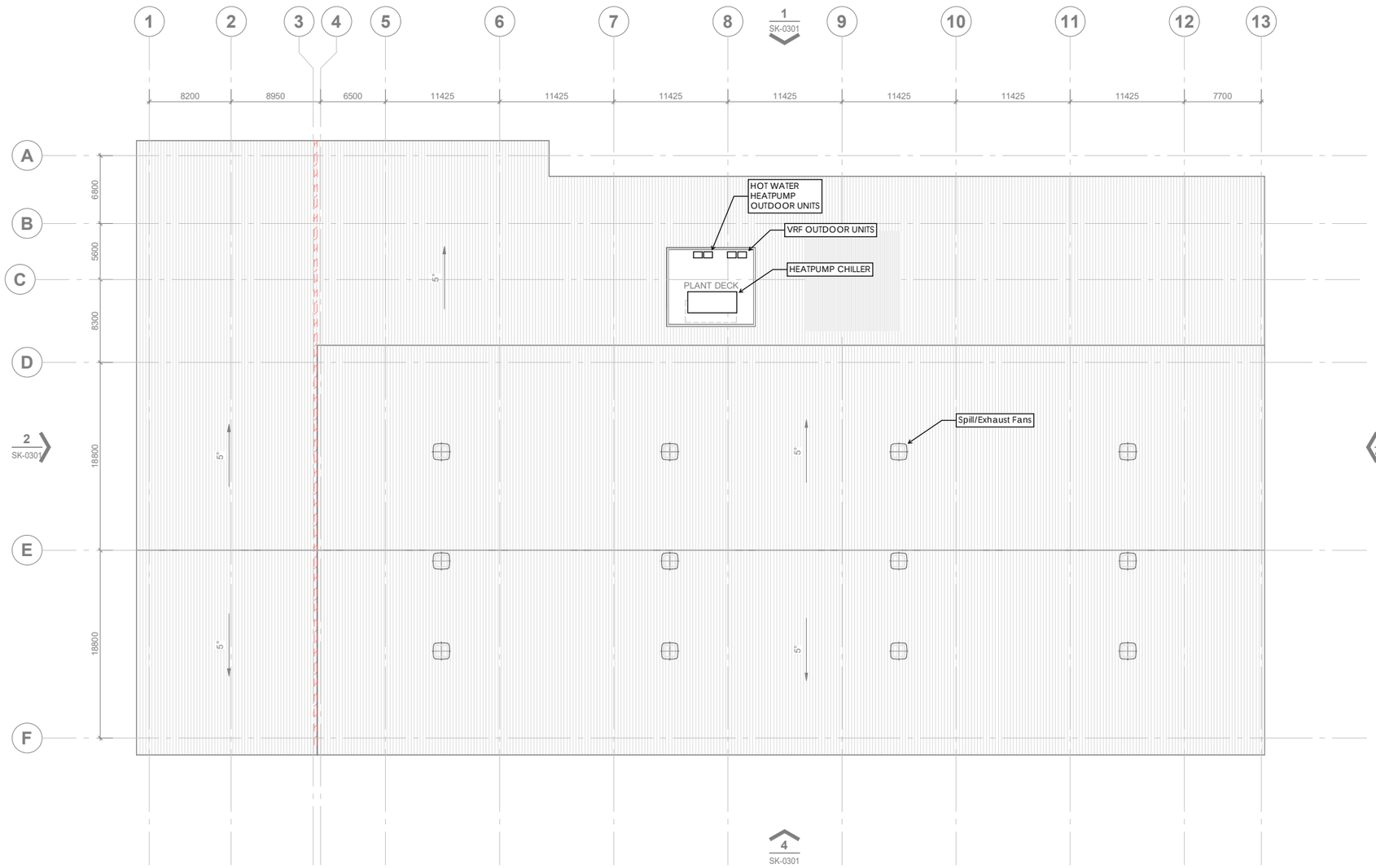
PROJECT No: 310701051

SHEET No: MSK02

Queenstown Events Centre

07/06/26 CLIENT: **QUEENSTOWN-LAKES DISTRICT COUNCIL** DRAWING **SINGLE STOREY - GROUND FLOOR PLAN** SCALE @ A1 **1 : 250** PROJECT No. **215101** DRAWING No. **SK-0101** REV.

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PROJECT:
QUEENSTOWN EVENTS CENTRE PROJECT

ADDRESS:
33 JOE OCONNELL DRIVE
FRANKTON, QUEENSTOWN
9300

SHEET TITLE:
MECHANICAL SERVICES ROOF PLAN

CONCEPT

DESIGNED: AM	DATE: 16.07.2026	ISSUE: -
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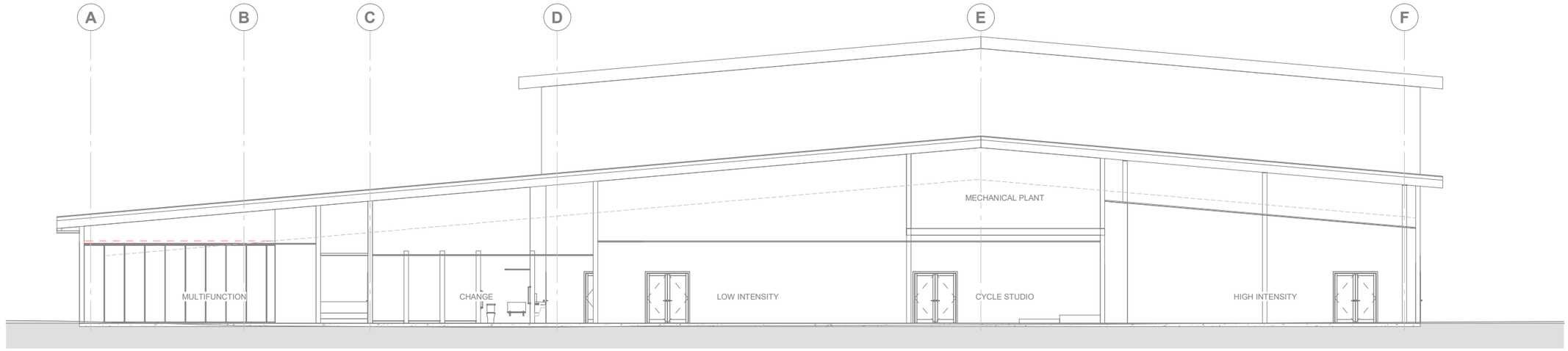
PROJECT No: 310701051

SHEET No: MSK03

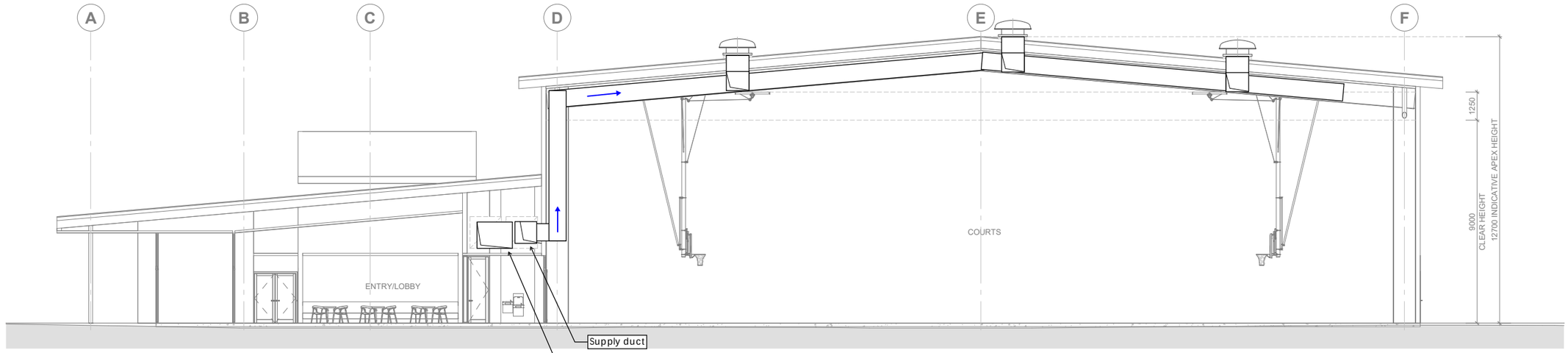
Queenstown Events Centre

07/15/26 CLIENT: **QUEENSTOWN-LAKES DISTRICT COUNCIL** DRAWING **SINGLE STOREY - ROOF PLAN** SCALE @ A1 **1 : 250** PROJECT No. **215101** DRAWING No. **SK-0103** REV.

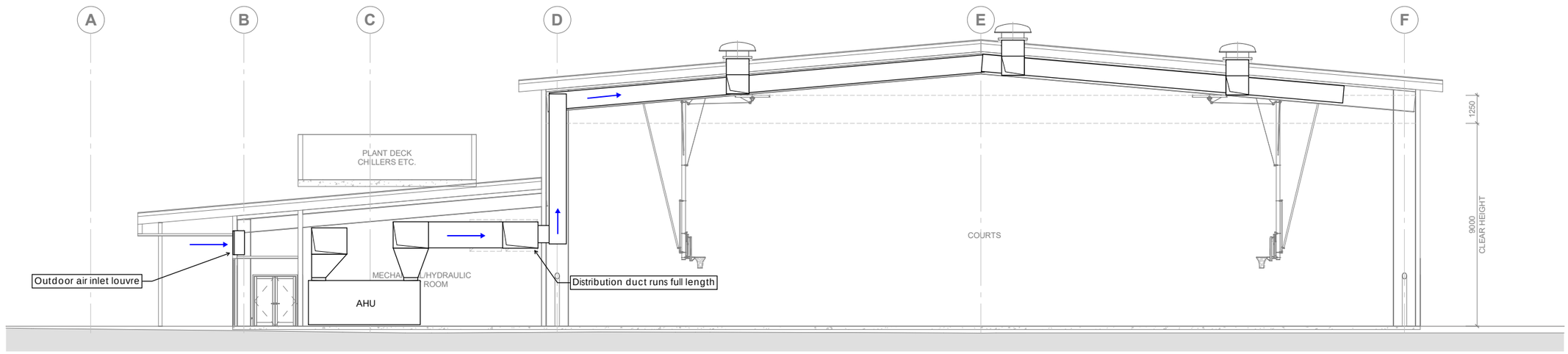
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1 | 1 : 100 Cross Section
SK-0101 | SECTION 1



2 | 1 : 100 Cross Section
SK-0101 | SECTION 2



3 | 1 : 100 Cross Section
SK-0101 | SECTION 3

ISSUE	AMENDMENT	DATE
-	-	----

CHECK ALL INFORMATION ON SITE PRIOR TO COMMENCING WORK. READ IN CONJUNCTION WITH THE SPECIFICATION AND OTHER RELEVANT DRAWINGS AND DOCUMENTS

DRAWINGS TO BE PRINTED IN COLOUR

Stantec

PROJECT:
QUEENSTOWN EVENTS CENTRE PROJECT

ADDRESS:
33 JOE OCONNELL DRIVE
FRANKTON, QUEENSTOWN
9300

SHEET TITLE:
MECHANICAL SERVICES CROSS SECTIONS

CONCEPT

DESIGNED: AM	DATE: 16.07.2026	ISSUE: -
DRAWN: AM	SCALE @ A1: 1:500	

PROJECT No: 310701051

SHEET No: MSK04

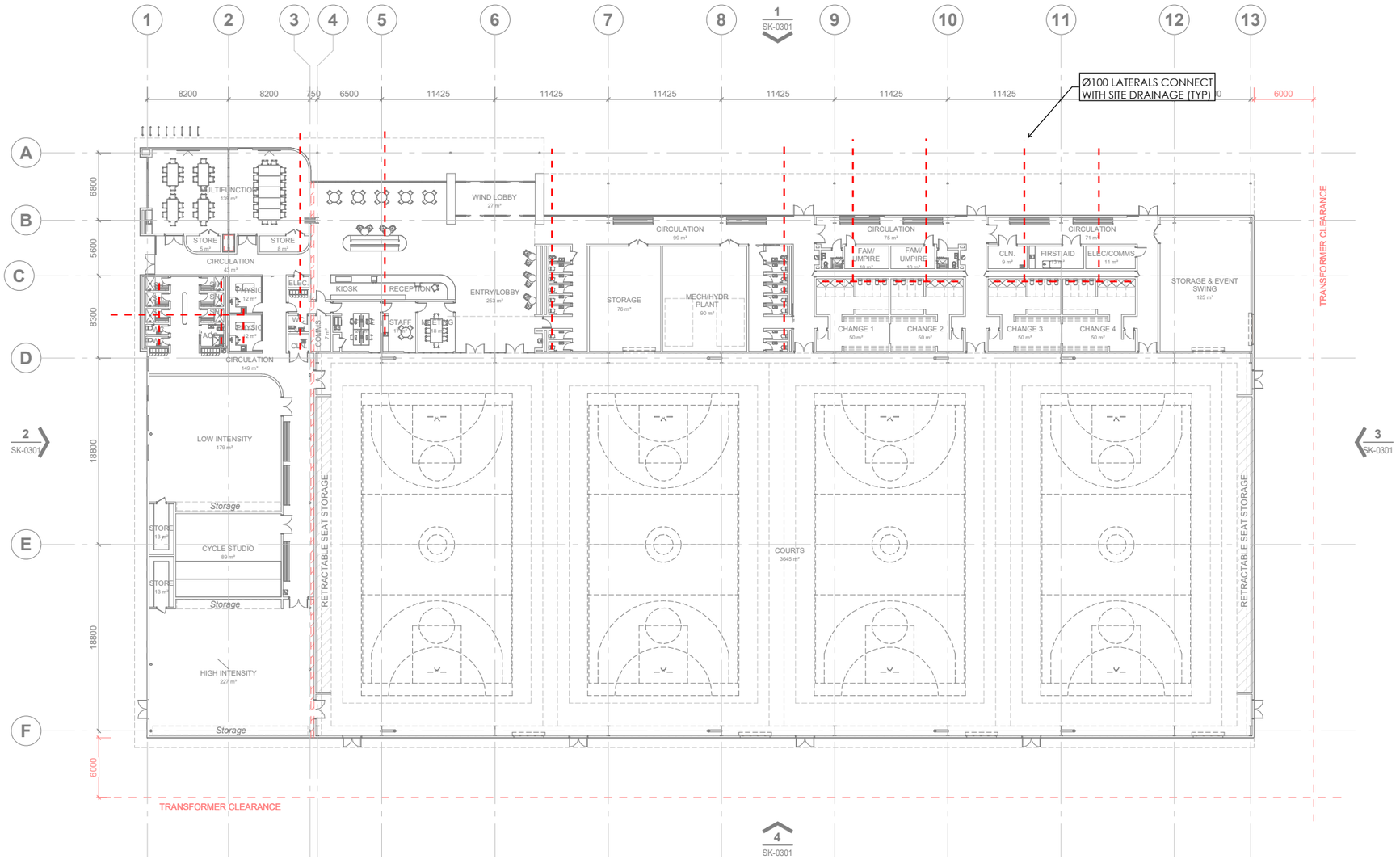
Queenstown Events Centre

07/21/26 CLIENT: **QUEENSTOWN-LAKES DISTRICT COUNCIL** DRAWING **SINGLE STOREY - SECTIONS** SCALE @ A1 **1 : 100** PROJECT No. **215101** DRAWING No. **SK-0402** REV.

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A.2 Hydraulic Services Sketch Drawings

310701051-HSK01 – HYDRAULIC SERVICES SANITARY DRAINAGE
310701051-HSK02 – HYDRAULIC SERVICES DOMESTIC WATER
310701051-HSK03 – HYDRAULIC SERVICES ROOF PLAN



ISSUE	AMENDMENT	DATE
-	-	-

CHECK ALL INFORMATION ON SITE PRIOR TO COMMENCING WORK. READ IN CONJUNCTION WITH THE SPECIFICATION AND OTHER RELEVANT DRAWINGS AND DOCUMENTS

DRAWINGS TO BE PRINTED IN COLOUR

Stantec

PROJECT:
QUEENSTOWN EVENTS CENTRE PROJECT

ADDRESS:
33 JOE OCONNELL DRIVE
FRANKTON, QUEENSTOWN
9300

SHEET TITLE:
HYDRAULIC SERVICES
SANITARY DRAINAGE

CONCEPT

DESIGNED: AM	DATE: 16.07.2026	ISSUE: -
DRAWN: AM	SCALE @ A1: 1:500	

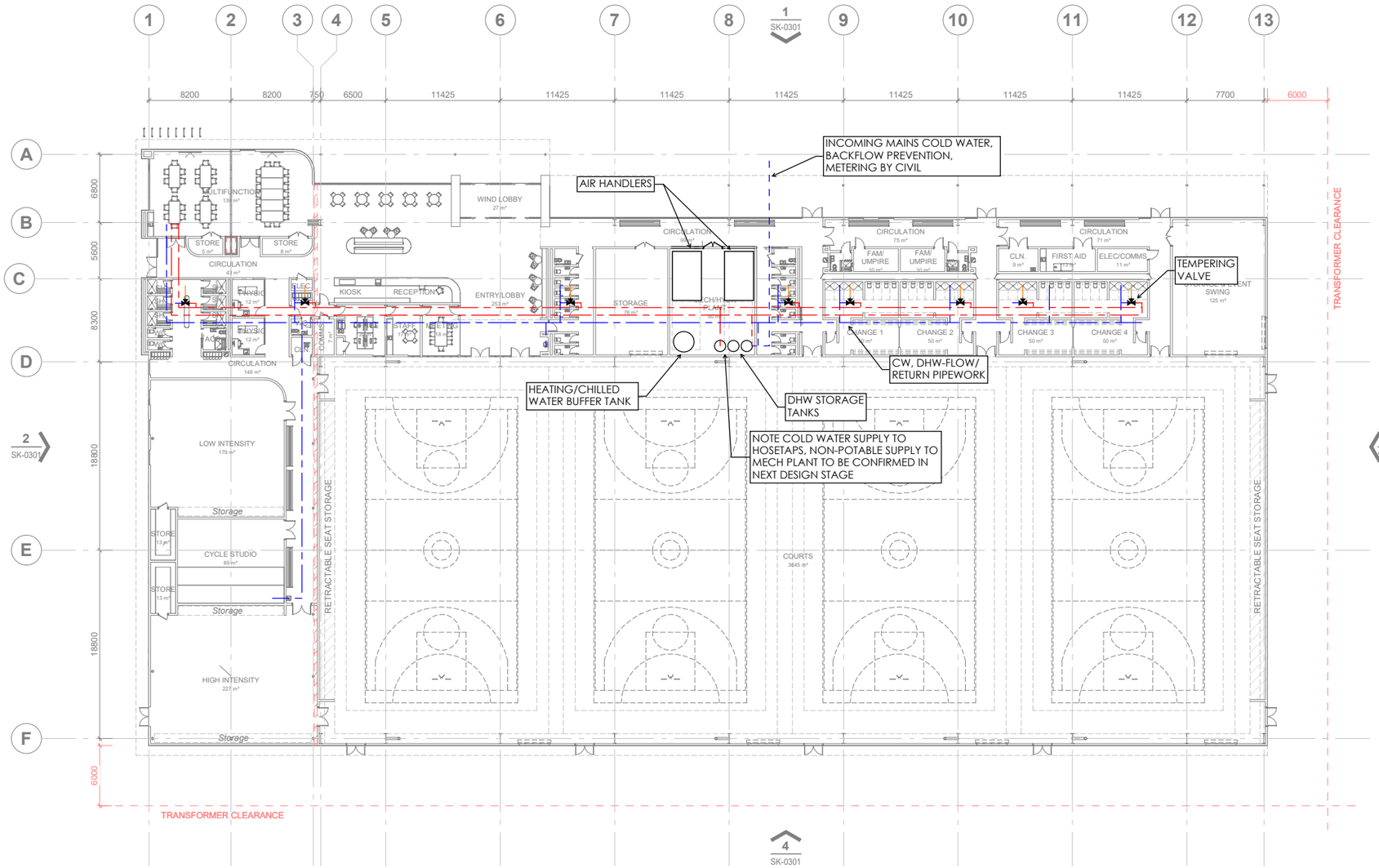
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SHEET No: HSK01

Queenstown Events Centre

07/06/26 CLIENT: **QUEENSTOWN-LAKES DISTRICT COUNCIL** DRAWING **SINGLE STOREY - GROUND FLOOR PLAN** SCALE @ A1 **1 : 250** PROJECT No. **215101** DRAWING No. **SK-0101** REV.

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DRAWINGS TO BE PRINTED IN COLOUR

Stantec

PROJECT:
QUEENSTOWN EVENTS CENTRE PROJECT

ADDRESS:
33 JOE OCONNELL DRIVE
FRANKTON, QUEENSTOWN
9300

SHEET TITLE:
HYDRAULIC SERVICES
DOMESTIC WATER

CONCEPT

DESIGNED: AM	DATE: 16.07.2026	ISSUE: -
DRAWN: AM	SCALE @ A1: 1:500	

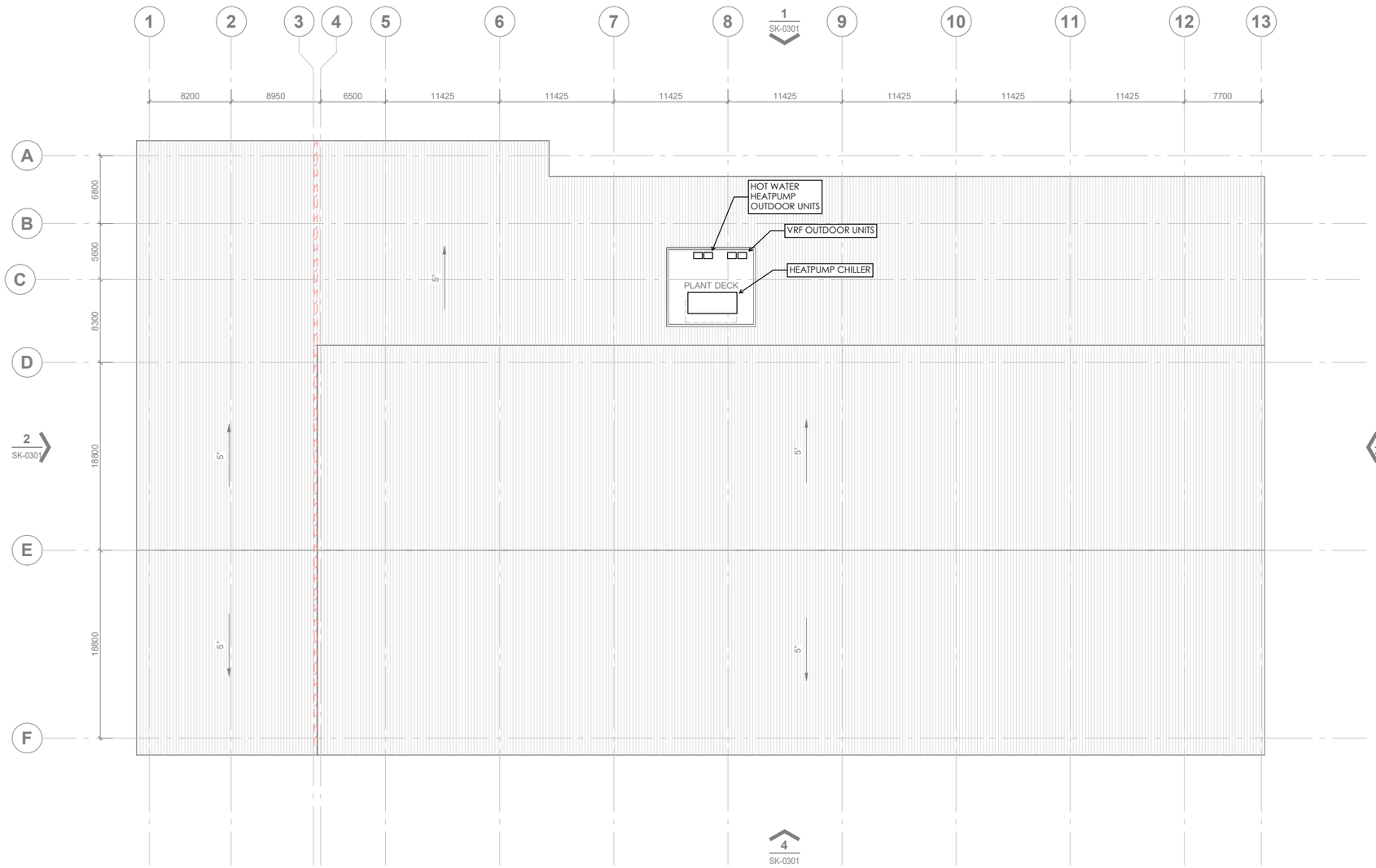
PROJECT No: 310701051

SHEET No: HSK02

Queenstown Events Centre

07/06/26 CLIENT: **QUEENSTOWN-LAKES DISTRICT COUNCIL** DRAWING **SINGLE STOREY - GROUND FLOOR PLAN** SCALE @ A1 **1 : 250** PROJECT No. **215101** DRAWING No. **SK-0101** REV.

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PROJECT:
QUEENSTOWN EVENTS CENTRE PROJECT

ADDRESS:
33 JOE OCONNELL DRIVE
FRANKTON, QUEENSTOWN
9300

SHEET TITLE:
HYDRAULIC SERVICES ROOF PLAN

CONCEPT

DESIGNED:	DATE:	ISSUE:
AM	16.07.2026	-
DRAWN: AM	SCALE @ A1: 1:500	

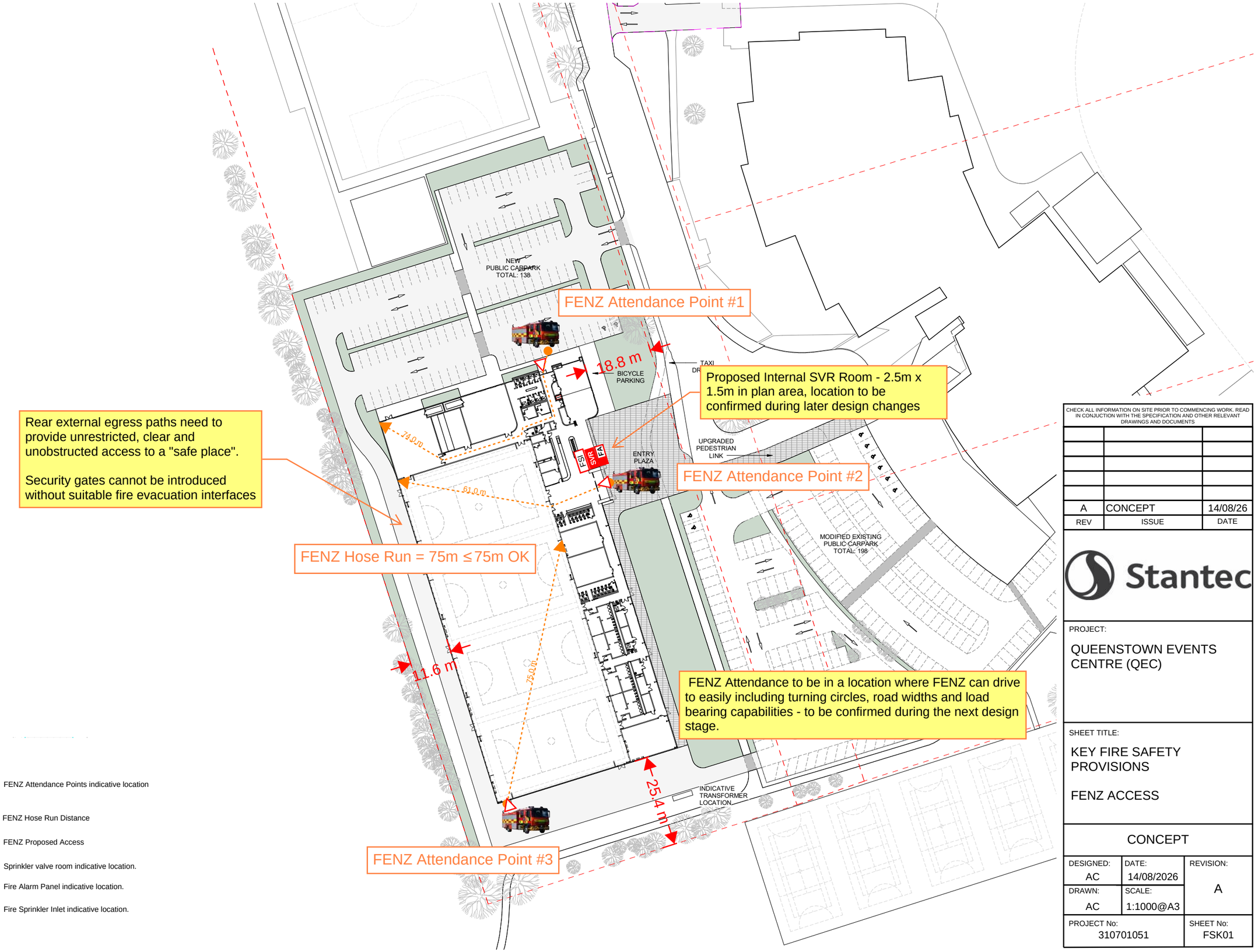
PROJECT No: 310701051

SHEET No: HSK03

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A.4 Fire Engineering Sketch Drawings

310701051-FSK01	Fire Safety Assessment – Site Plan
310701051-FSK02	Occupancy Assessment – Floor Plan
310701051-FSK03	Fire Safety Assessment – Floor Plan
310701051-FSK04	Fire Safety Assessment – Elevations
310701051-FSK05	Fire Safety Assessment – Showcourt Setup
310701051-FSK06	Fire Safety Assessment – Showcourt Setup
310701051-FSK07	Fire Safety Assessment – Showcourt Setup



FIREFIGHTING ASSESSMENT

- FENZ Attendance Points indicative location
- FENZ Hose Run Distance
- FENZ Proposed Access
- SVR — Sprinkler valve room indicative location.
- FA — Fire Alarm Panel indicative location.
- FSI — Fire Sprinkler Inlet indicative location.

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REV	ISSUE	DATE
A	CONCEPT	14/08/26

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PROJECT:
QUEENSTOWN EVENTS CENTRE (QEC)

SHEET TITLE:
KEY FIRE SAFETY PROVISIONS

FENZ ACCESS

CONCEPT

DESIGNED:	DATE:	REVISION:
AC	14/08/2026	A
DRAWN: AC	SCALE: 1:1000@A3	
PROJECT No: 310701051		SHEET No: FSK01

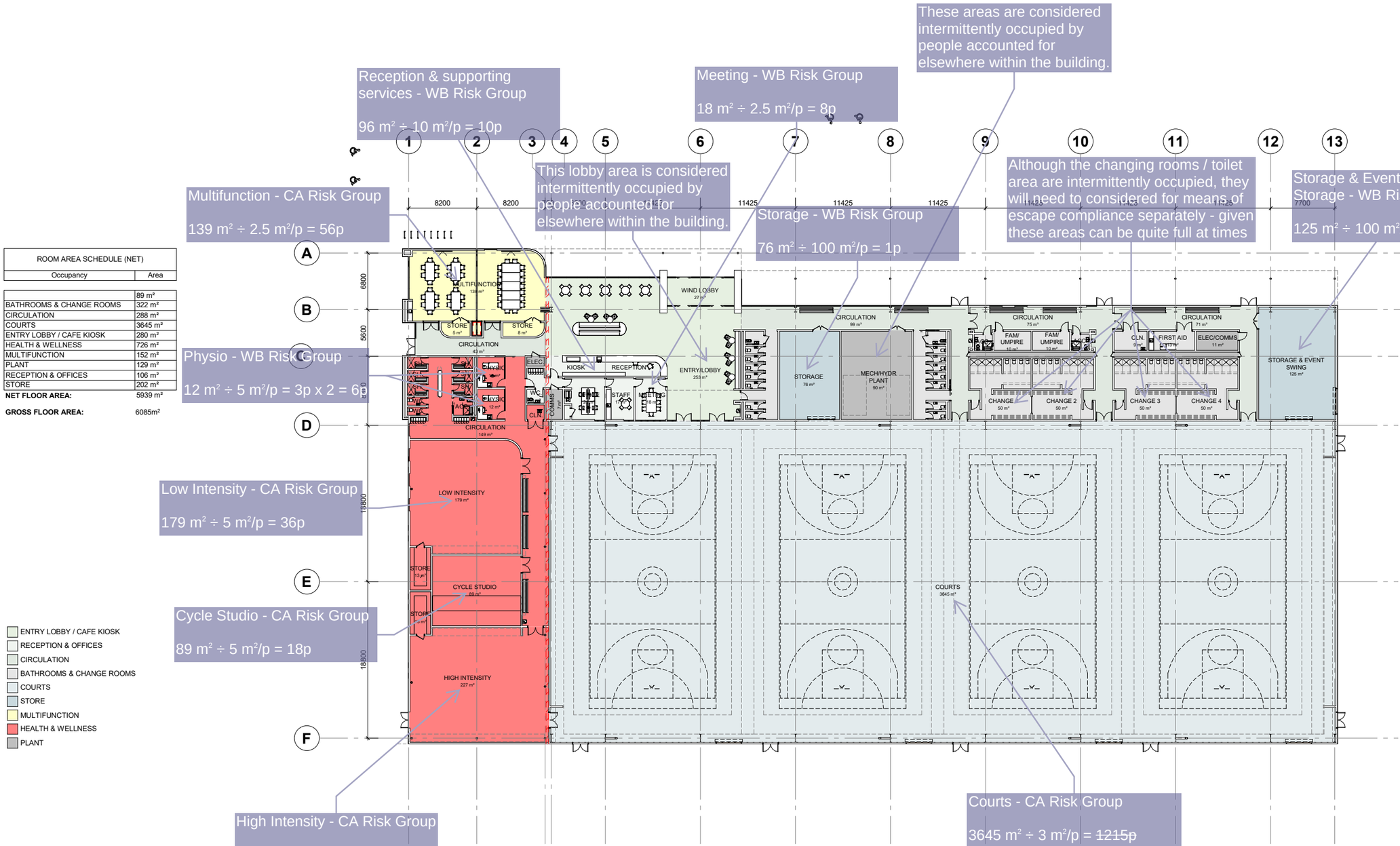
Queenstown Events Centre

07/28/26 CLIENT: **QUEENSTOWN-LAKES DISTRICT COUNCIL** DRAWING **SINGLE STOREY - SITE PLAN** SCALE @ A1 **1 : 500** PROJECT No. **215101** DRAWING No. **SK-0011** REV.

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ROOM AREA SCHEDULE (NET)	
Occupancy	Area
	89 m²
BATHROOMS & CHANGE ROOMS	322 m²
CIRCULATION	288 m²
COURTS	3645 m²
ENTRY LOBBY / CAFE KIOSK	280 m²
HEALTH & WELLNESS	726 m²
MULTIFUNCTION	152 m²
PLANT	129 m²
RECEPTION & OFFICES	106 m²
STORE	202 m²
NET FLOOR AREA:	5939 m²
GROSS FLOOR AREA:	6085m²



Total Building Occupancy:

Maximum Design Occupancy = **2100 people** based on client direction regards potential Events Use

Primary Risk Group CA

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REV	ISSUE	DATE
A	CONCEPT	14/08/26

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PROJECT:
QUEENSTOWN EVENTS CENTRE (QEC)

SHEET TITLE:
KEY FIRE SAFETY PROVISIONS

OCCUPANCY ASSESSMENT

CONCEPT

DESIGNED:	DATE:	REVISION:
AC	14/08/2026	A
DRAWN: AC	SCALE: 1:500 @ A3	
PROJECT No: 310701051		SHEET No: FSK02

Queenstown Events Centre

07/27/26 CLIENT: **QUEENSTOWN-LAKES DISTRICT COUNCIL** DRAWING **SINGLE STOREY - GROUND FLOOR - AREA PLAN** SCALE @ A1 **1 : 250**

PROJECT No. **215101** DRAWING No. **SK-0901** REV.

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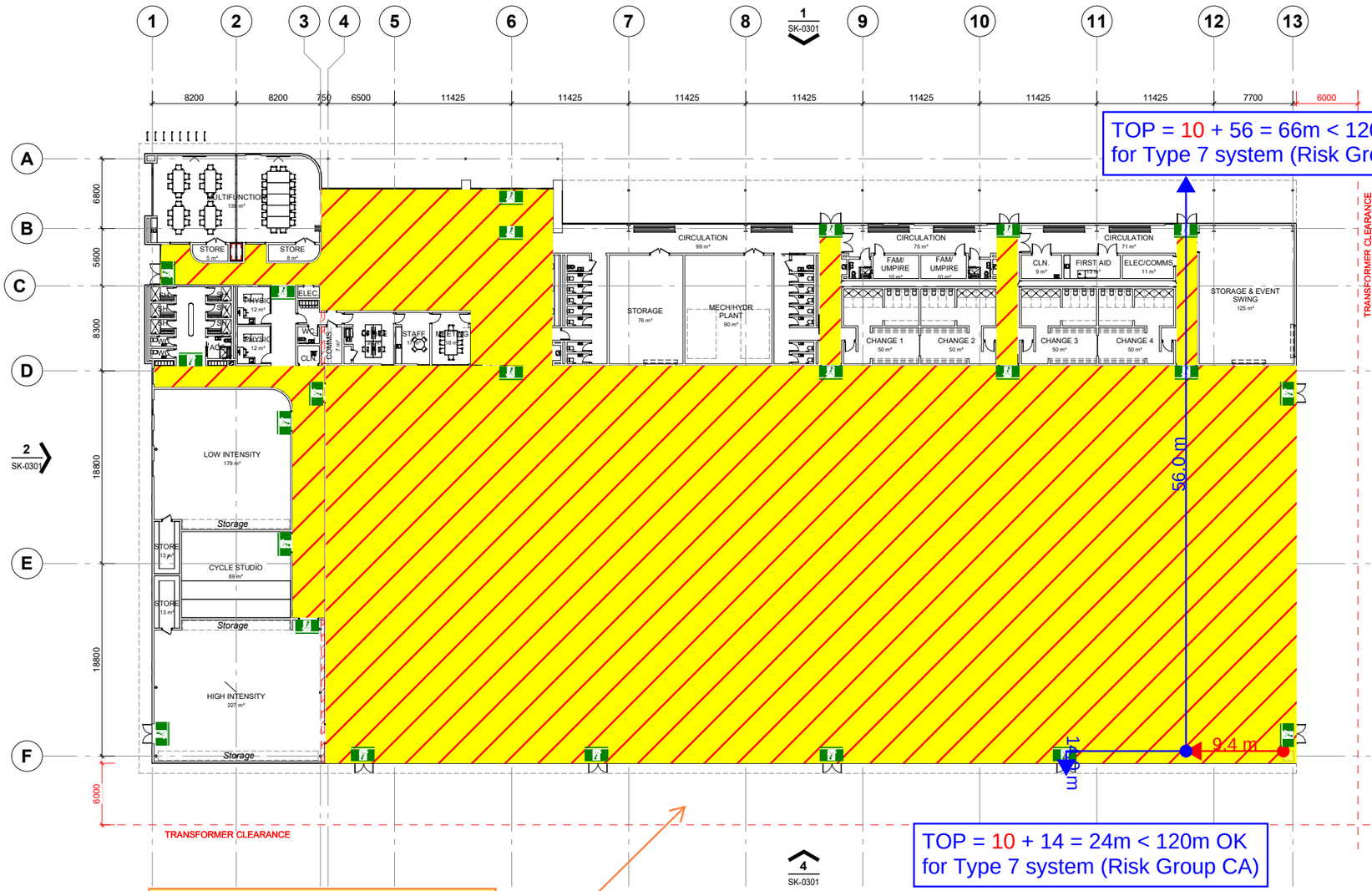
LEGEND:

13.7 m — Dead end open path travel

13.7 m — Total open path travel

Emergency lighting (indicative coverage) to F6 requirements. Refer to Electrical Engineer's documentation for further information.

Illuminated exit signs (indicative location) to F8 requirements. Refer to Electrical Engineer's documentation for further information.



TOP = 10 + 56 = 66m < 120m OK for Type 7 system (Risk Group CA)

TOP = 10 + 14 = 24m < 120m OK for Type 7 system (Risk Group CA)

Rear external egress paths need to provide unrestricted, clear and unobstructed access to a "safe place".

Security gates cannot be introduced without suitable fire evacuation interfaces

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REV	ISSUE	DATE
A	CONCEPT	14/08/26

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PROJECT:
QUEENSTOWN EVENTS CENTRE (QEC)

SHEET TITLE:
KEY FIRE SAFETY PROVISIONS

CONCEPT

DESIGNED:	DATE:	REVISION:
AC	14/08/2026	A
DRAWN: AC	SCALE: 1:500 @ A3	
PROJECT No: 310701051		SHEET No: FSK03

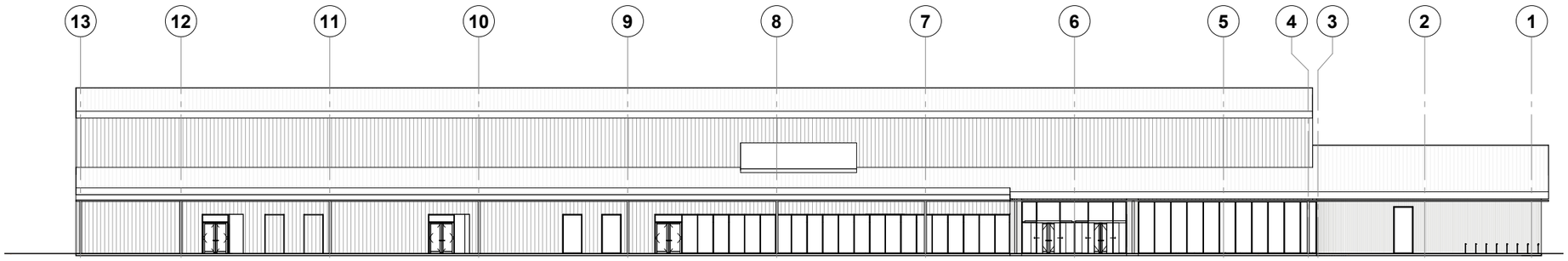
Queenstown Events Centre

07/06/26 CLIENT: **QUEENSTOWN-LAKES DISTRICT COUNCIL** DRAWING **SINGLE STOREY - GROUND FLOOR PLAN** SCALE @ A1 **1 : 250**

PROJECT No. **215101** DRAWING No. **SK-0101** REV.

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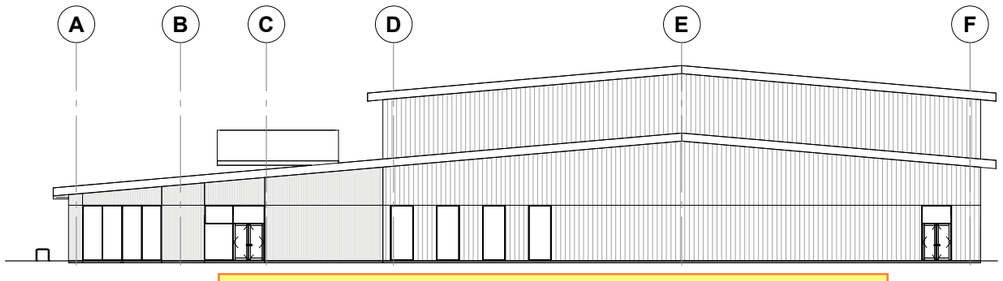
1 | 1 : 200 Elevation
A1-0801 | EAST ELEVATION

East Elevation Wall
FLED: > 400 MJ/m² to ≤ 800 MJ/m²
Wall is 18.8m from the relevant boundary (min. distance to relevant boundary taken as 9m).
Height & Width: 10.5m & 112m
Enclosed Rectangle Height & Width: 8m & 20m
Therefore, the maximum unprotected area is 100% for the sprinkler protected building

External Cladding Requirements:

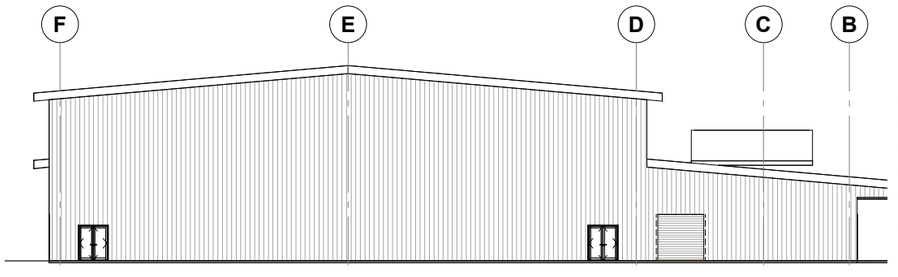
There are specific fire performance requirements for external cladding systems for buildings that are within 1.0 m of a relevant boundary, and buildings that are taller than 10.0 m (measured from the lowest floor level to the top of the highest roof).

Although all external walls of the new QEC building are greater than 1.0m from the relevant boundaries, the walls have a height greater than 10m and are required to meet the requirements of a "Type A" performance criteria for the cladding system under certified test conditions:



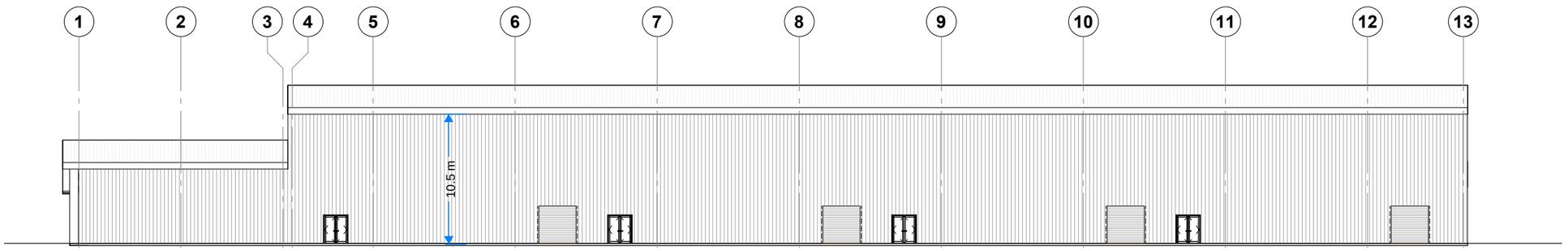
2 | 1 : 200 Elevation
A1-0801 | NORTH ELEVATION

North Elevation Wall
FLED: > 400 MJ/m² to ≤ 800 MJ/m²
Wall is remote from the relevant boundary (min. distance to relevant boundary taken as 9m).
Height & Width: 12m & 59m
Enclosed Rectangle Height & Width: 8m & 20m
Therefore, the maximum unprotected area is 100% for the sprinkler protected building



3 | 1 : 200 Elevation
A1-0801 | SOUTH ELEVATION

South Elevation Wall
FLED: > 400 MJ/m² to ≤ 800 MJ/m²
Wall is 25.4m from the relevant boundary (min. distance to relevant boundary taken as 9m).
Height & Width: 12m & 59m
Enclosed Rectangle Height & Width: 8m & 20m
Therefore, the maximum unprotected area is 100% for the sprinkler protected building



4 | 1 : 200 Elevation
A1-0801 | WEST ELEVATION

West Elevation Wall
FLED: > 400 MJ/m² to ≤ 800 MJ/m²
Wall is 11.6m from the relevant boundary (min. distance to relevant boundary taken as 9m).
Height & Width: 10.5m & 112m
Enclosed Rectangle Height & Width: 8m & 20m
Therefore, the maximum unprotected area is 100% for the sprinkler protected building

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REV	ISSUE	DATE
A	CONCEPT	14/08/26

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PROJECT:
QUEENSTOWN EVENTS CENTRE (QEC)

SHEET TITLE:
KEY FIRE SAFETY PROVISIONS

CONCEPT

DESIGNED:	DATE:	REVISION:
AC	14/08/2026	A
DRAWN: AC	SCALE: 1:400 @ A3	
PROJECT No: 310701051		SHEET No: FSK04

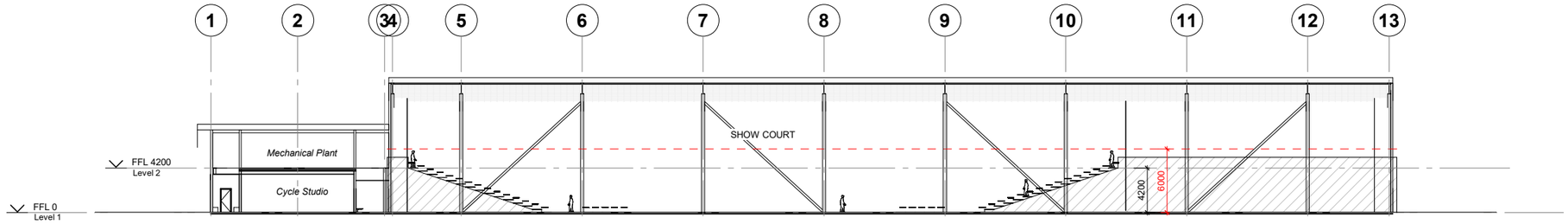
Queenstown Events Centre

07/27/26 CLIENT: **QUEENSTOWN-LAKES DISTRICT COUNCIL** DRAWING **SINGLE STOREY - ELEVATIONS** SCALE @ A1 **1 : 200**

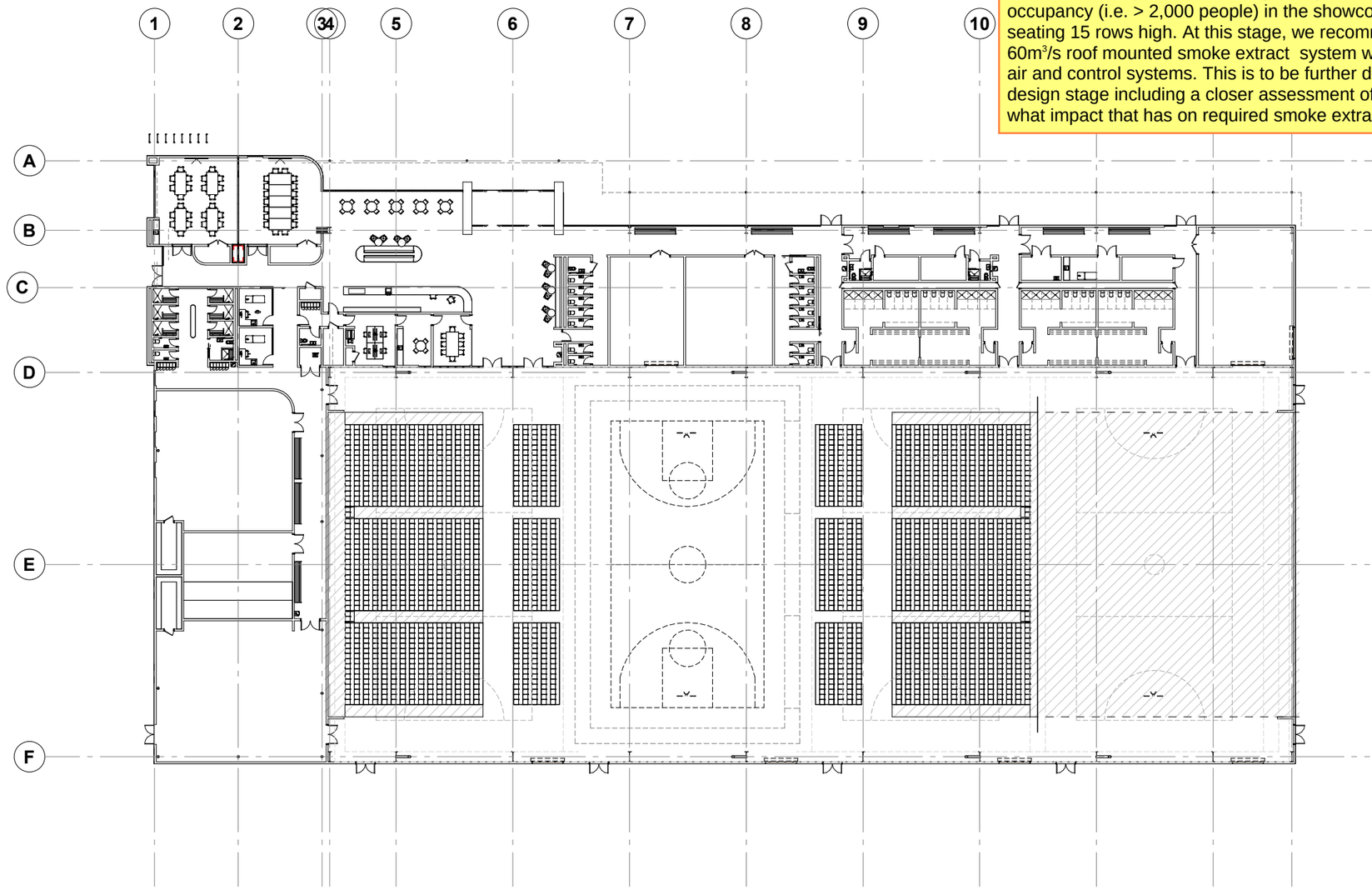
PROJECT No. **215101** DRAWING No. **SK-0301** REV.

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Based on preliminary assessments to date, it is anticipated that a smoke extract system will be required given the high design occupancy (i.e. > 2,000 people) in the showcourt including tiered seating 15 rows high. At this stage, we recommend allowance for a 60m³/s roof mounted smoke extract system with associated make-up air and control systems. This is to be further developed in the next design stage including a closer assessment of evacuation times and what impact that has on required smoke extract volumes.



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REV	ISSUE	DATE
A	CONCEPT	14/08/26

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PROJECT:
QUEENSTOWN EVENTS CENTRE (QEC)

SHEET TITLE:
KEY FIRE SAFETY PROVISIONS

CONCEPT

DESIGNED:	DATE:	REVISION:
AC	14/08/2026	A
DRAWN: AC	SCALE: 1:500 @ A3	
PROJECT No: 310701051		SHEET No: FSK05

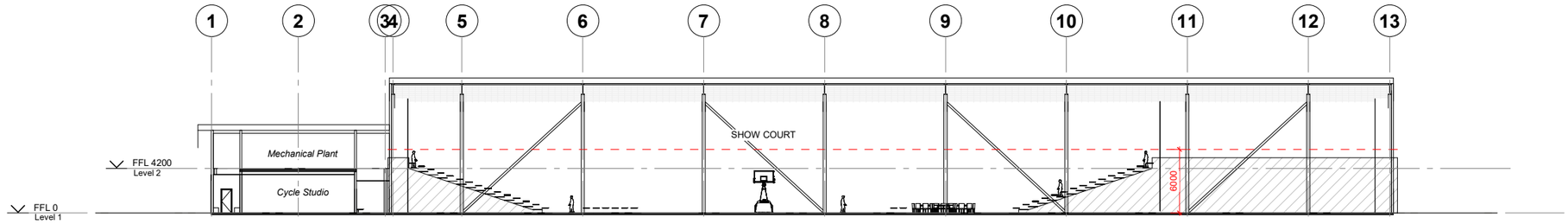
Queenstown Events Centre

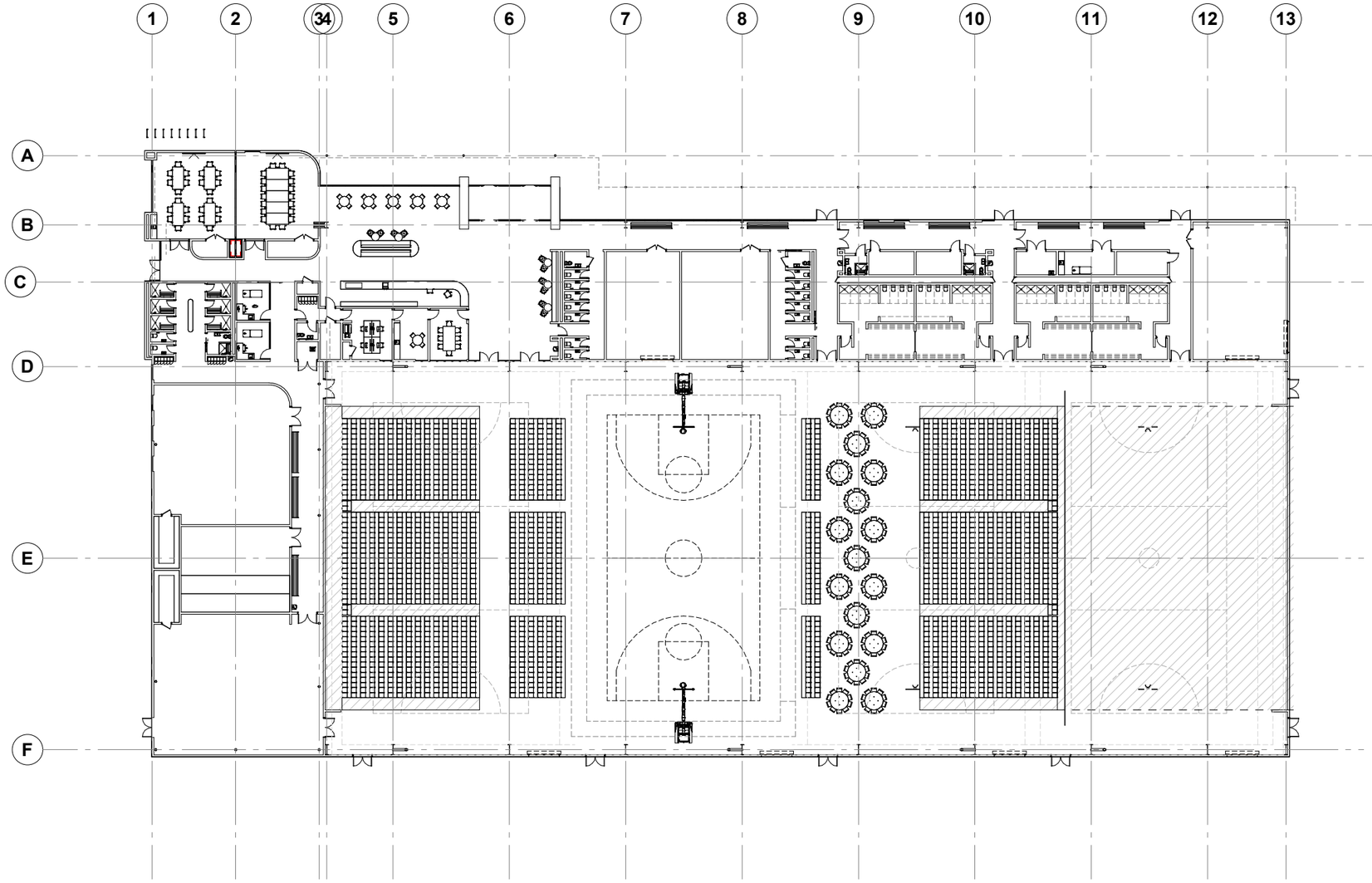
PROJECT No. **215101**

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07/27/26 CLIENT: **QUEENSTOWN-LAKES DISTRICT COUNCIL** DRAWING **SINGLE STOREY - SHOWCOURT SETUP - 2000PX** SCALE @ A1 **1 : 250** DRAWING No. **SK-0502** REV.





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A	CONCEPT	14/08/26

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PROJECT:

QUEENSTOWN EVENTS CENTRE (QEC)

SHEET TITLE:

KEY FIRE SAFETY PROVISIONS

CONCEPT

DESIGNED:	DATE:	REVISION:
AC	14/08/2026	A
DRAWN: AC	SCALE: 1:500 @ A3	
PROJECT No: 310701051		SHEET No: FSK06

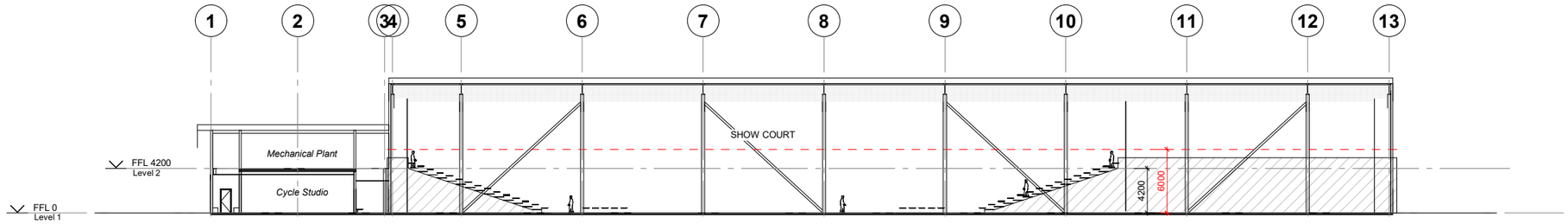
Queenstown Events Centre

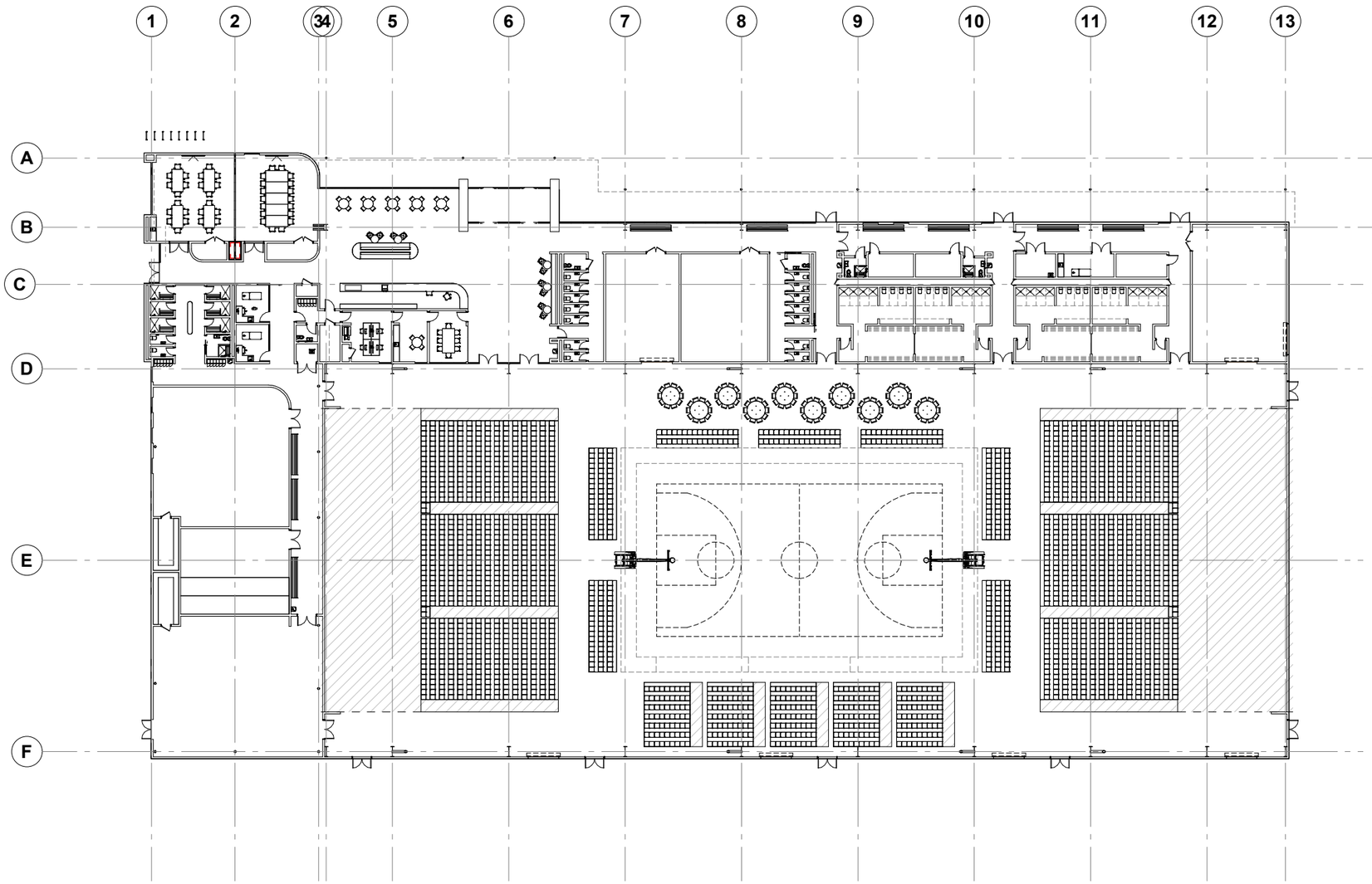
07/28/26 CLIENT: **QUEENSTOWN-LAKES DISTRICT COUNCIL** DRAWING **SINGLE STOREY - SHOWCOURT SETUP - 2000PX** SCALE @ A1 **1 : 250**

PROJECT No. **215101** DRAWING No. **SK-0503** REV.

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PROJECT:

QUEENSTOWN EVENTS CENTRE (QEC)

SHEET TITLE:

KEY FIRE SAFETY PROVISIONS

CONCEPT

DESIGNED:	DATE:	REVISION:
AC	14/08/2026	A
DRAWN:	SCALE:	
AC	1:500 @ A3	
PROJECT No: 310701051		SHEET No: FSK07

Queenstown Events Centre

07/27/26 CLIENT: **QUEENSTOWN-LAKES DISTRICT COUNCIL** DRAWING **SINGLE STOREY - SHOWCOURT SETUP - 2000PX NBL** SCALE @ A1 **1 : 250**

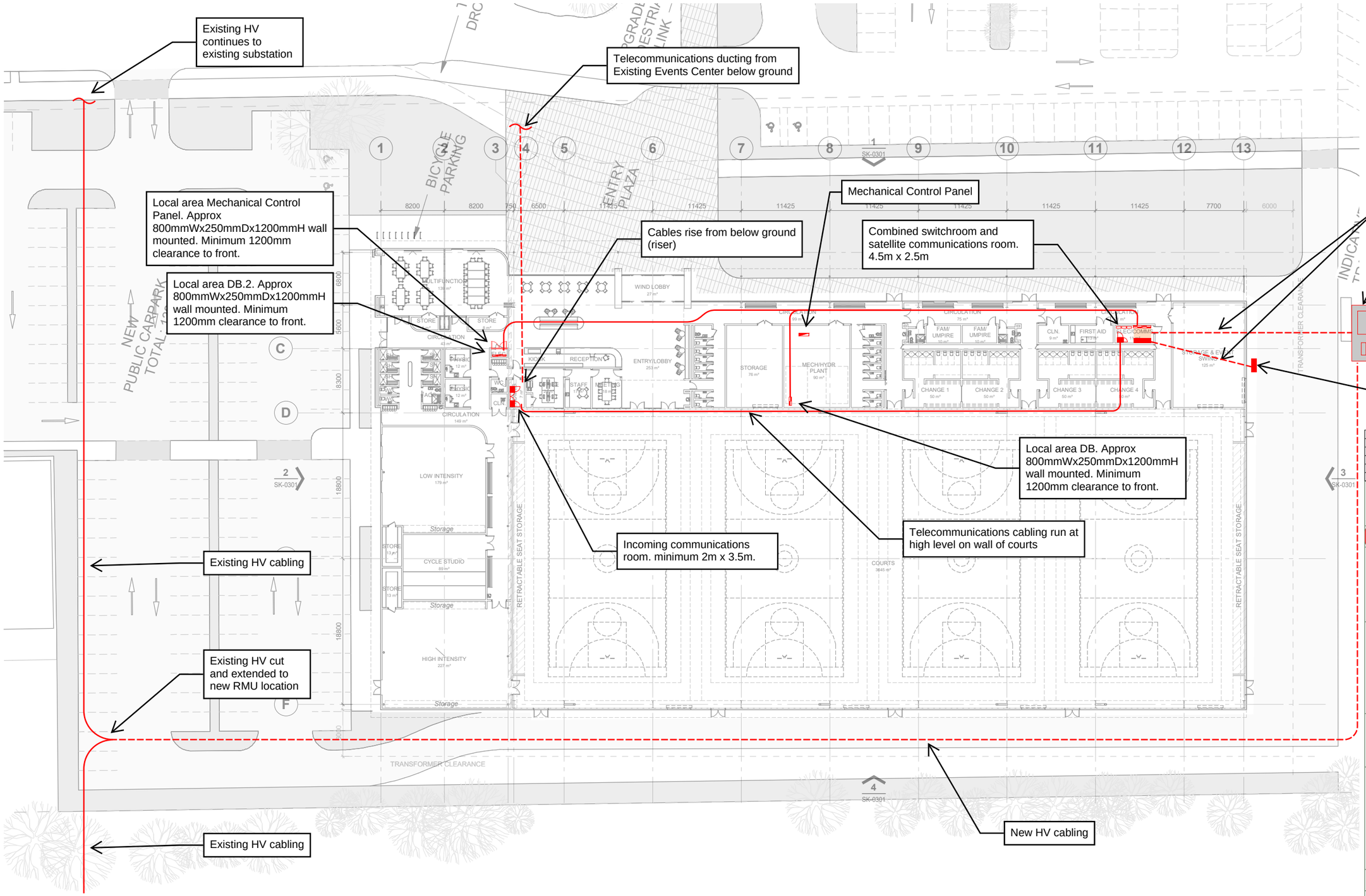
PROJECT No. **215101** DRAWING No. **SK-0504** REV.

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A.3 Electrical Services Sketch Drawings

310701051-EKS01 - ELECTRICAL SERVICES GROUND FLOOR LAYOUT
310701051-EKS02 – ELECTRICAL SERVICES LIGHTING FLOOR LAYOUTS
310701051-EKS03 – ELECTRICAL SERVICES POWER & DATA FLOOR LAYOUTS
310701051-EKS04 – ELECTRICAL SERVICES LV SCHEMATIC
310701051-EKS05 - ELECTRICAL SERVICES DETAILS



ISSUE	AMENDMENT	DATE
A	CONCEPT ISSUE	13.08.2026

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QUEENSTOWN EVENTS CENTRE PROJECT

ADDRESS:
33 JOE OCONNELL DRIVE
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9300

SHEET TITLE:
ELECTRICAL SERVICES GROUND FLOOR LAYOUT

CONCEPT

DESIGNED:	DATE:	ISSUE:
MA	16.07.2026	A
DRAWN: MA	SCALE @ A1: NTS	

PROJECT No: 310701051

SHEET No: ESK01

Reception / lobby areas provided with combination of ceiling recessed circular downlights, feature pendants, and LED strip cove lighting. Automated lighting control to be provided on time schedule, operating on presence detection out of normal hours, with override controls behind reception counter.

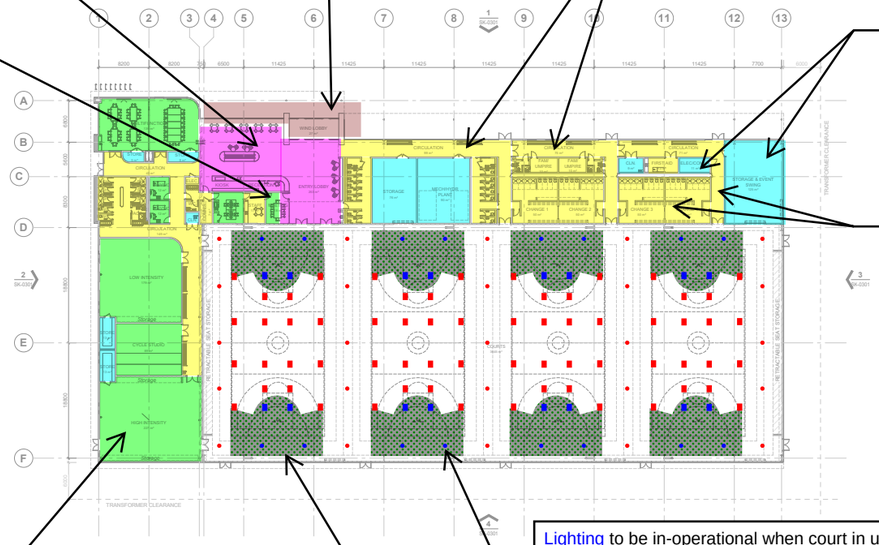
Exterior circular recessed down-lighting to be provided below canopy

Circulation spaces with ample natural daylight shall be provided with daylight dimming.

Meeting spaces to be provided with 600x600 troffer type lighting, complete with manual dimming control, and absence detection.

Plant and storage spaces to be provided with surface mounted lighting and presence detection where appropriate.

Change, toilet and circulation spaces to be provided with automatic presence detection lighting control.



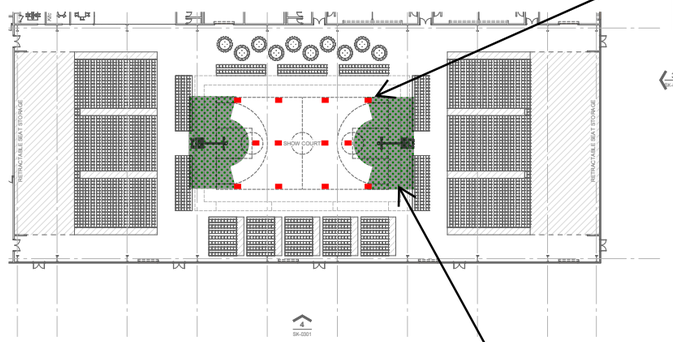
Multifunction and studio spaces to be provided with 600x600 troffer type lighting, complete with manual dimming control, and absence detection. Scene selection control shall be provided to each space. Allowance for RGB coloured LED strip cove lighting shall be considered.

Lighting to be in-operational when court in use, independent scene selection control to be provided. Potential to maintain operation with strict glare control.

Denotes lighting exclusion zones when courts in operation (in accordance with AS/NZS 2560.2)

Typical Use Scenerio

Additional lighting to be provided for televised show court operation overlay. Other lighting to operate at reduced output to perimeter of space (outside of court area).



Denotes lighting exclusion zones when courts in operation (in accordance with AS/NZS 2560.2). Any lighting in these spaces to be in-operational in show court lighting scene.

Show Court Event Overlay

ISSUE	AMENDMENT	DATE
A	CONCEPT ISSUE	13.08.2026

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PROJECT:
QUEENSTOWN EVENTS CENTRE PROJECT

ADDRESS:
33 JOE OCONNELL DRIVE
FRANKTON, QUEENSTOWN
9300

SHEET TITLE:
ELECTRICAL SERVICES
LIGHTING
FLOOR LAYOUTS

CONCEPT

DESIGNED: MA	DATE: 16.07.2026	ISSUE: A
DRAWN: MA	SCALE @ A1: 1:500	

PROJECT No: 310701051

SHEET No: ESK02

Power to be provided for ancillary systems, such as automatic doors

Power & data provisions shall be provided for meeting spaces, including teleconference facilities. Floor box to be provided to islanded meeting table, complete with 1 dual power outlet, 1 dual data outlet, and AV outlet. Floor box lid to accept floor finish, and have cable outlet.

Power outlets to be provided to all walls within multifunction space to facilitate conference / events. Provision for two floor boxes, each within minimum 1 dual power outlets, and 1 dual data outlet.

Power provisions to be allowed for domestic appliances to kitchen space (including oven & boiling water tap)

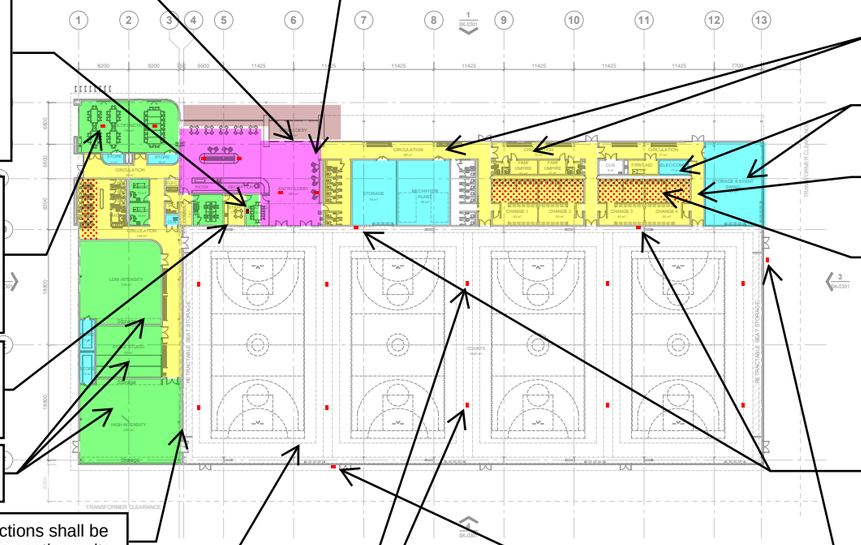
Power outlets to be provided to all walls within studio spaces.

Power & Communication connections shall be provided to motorised retractable seating units.

Court area floor boxes to be provided in run off space to corners of each court (4no. to each court). Each floor box to include 1 dual data outlet, 1 dual GPO (on dedicated circuit) and one 20A starter coupler (on dedicated circuit). Floor box lid to accept floor finish, have cable outlet and be lockable.

Show court edge floor box provisions (typical). See detail

Reception / lobby areas provided with power and data provisions for workstations, digital signage / screens, and cafe elements. Four heavy duty stainless steel floor boxes to be provided complete with 1 dual power outlet and 1 dual data outlet. Floor box lid to accept floor finish, have cable outlet, be lockable and be suitable for high foot traffic.



Power & data outlets shall be provided as necessary for digital signage (typical).

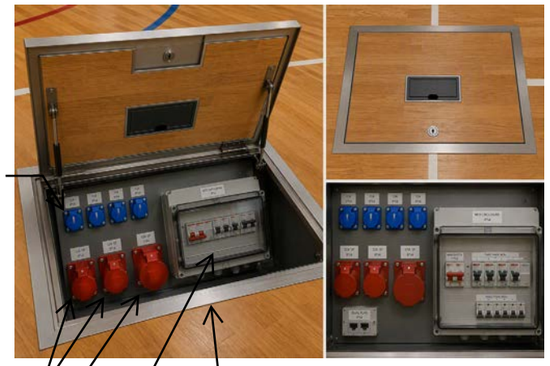
Plant and storage spaces to be provided with general maintenance power outlets

Cleaners power outlets to be provided within 15m of all areas (typical)

Shower areas to be provided with electric underfloor heating systems to minimise wet floor risks

Interior wall recessed power connection panel. Panel to be recessed stainless steel complete with key lock. Panel shall be custom manufactured and include lockable hatch in primary door to allow cable exit, and sufficient internal space to allow plug in connections to be used and door to be re-locked to prevent tamper.
Panel to include:
- Main Switch & Protective Devices
- Outgoing circuits to local court floor boxes
- 1x 63A Three Phase
- 2x 32A Three Phase
- 4x 10A single phase outlets
- 1x Dual data outlet

Exterior wall recessed power connection panels. Each panel to be recessed stainless steel IP54 minimum complete with key lock. Panel shall be custom manufactured and include lockable hatch in primary door to allow cable exit (whilst maintain IP54 rating), and with sufficient internal space to allow plug in connections to be used and door to be re-locked to prevent tamper.
Panel to include:
- Main Switch & Protective Devices
- 1x 63A Three Phase
- 2x 32A Three Phase
- 4x 15A single phase outlets
- 1x Dual data outlet



4no. 15Amp Single Phase Outlets

2no. 32Amp Three Phase Outlets

1no. 63Amp Three Phase Outlet

63Amp Distribution Board

600x600mm pit complete with recessed stainless steel lid (to accept floor finish), assistance struts, cable outlet and lid lock.

Example courts floor boxes

(Provision for custom manufacture)

125Amp Distribution Board

Recessing trim

4no. 15Amp Single Phase Outlets

2no. 32Amp Three Phase Outlets

1no. 63Amp Three Phase Outlet

1no. Dual Data Outlet

IP54 seals where required

Lockable stainless steel door

Cable exit hatch

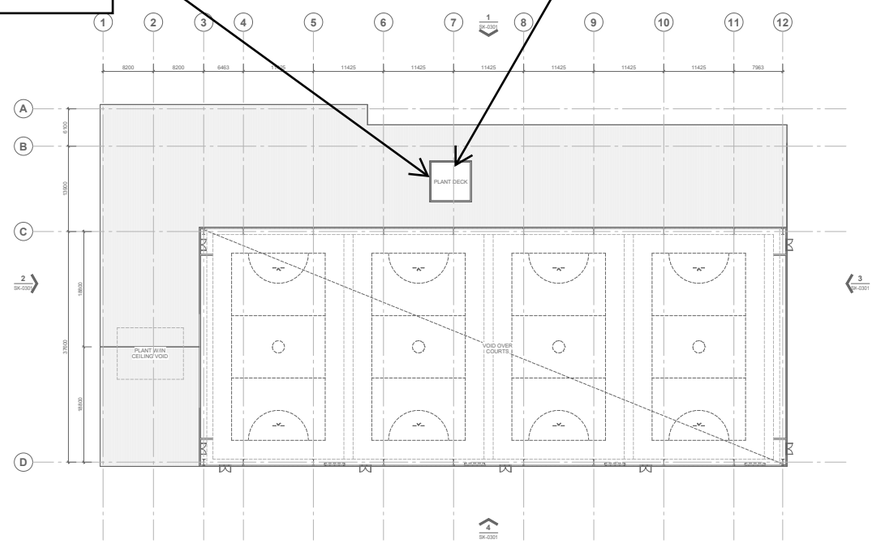


Example Wall Power Connection Panel

(Provison to consider custom manufacture)

15A IP54 power outlet to be provided for exterior roof maintenance.

Plant and storage spaces to be provided with general maintenance power outlets



ISSUE	AMENDMENT	DATE
A	CONCEPT ISSUE	13.08.2026

CHECK ALL INFORMATION ON SITE PRIOR TO COMMENCING WORK. READ IN CONJUNCTION WITH THE SPECIFICATION AND OTHER RELEVANT DRAWINGS AND DOCUMENTS

DRAWINGS TO BE PRINTED IN COLOUR

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PROJECT:
QUEENSTOWN EVENTS CENTRE PROJECT

ADDRESS:
33 JOE OCONNELL DRIVE
FRANKTON, QUEENSTOWN
9300

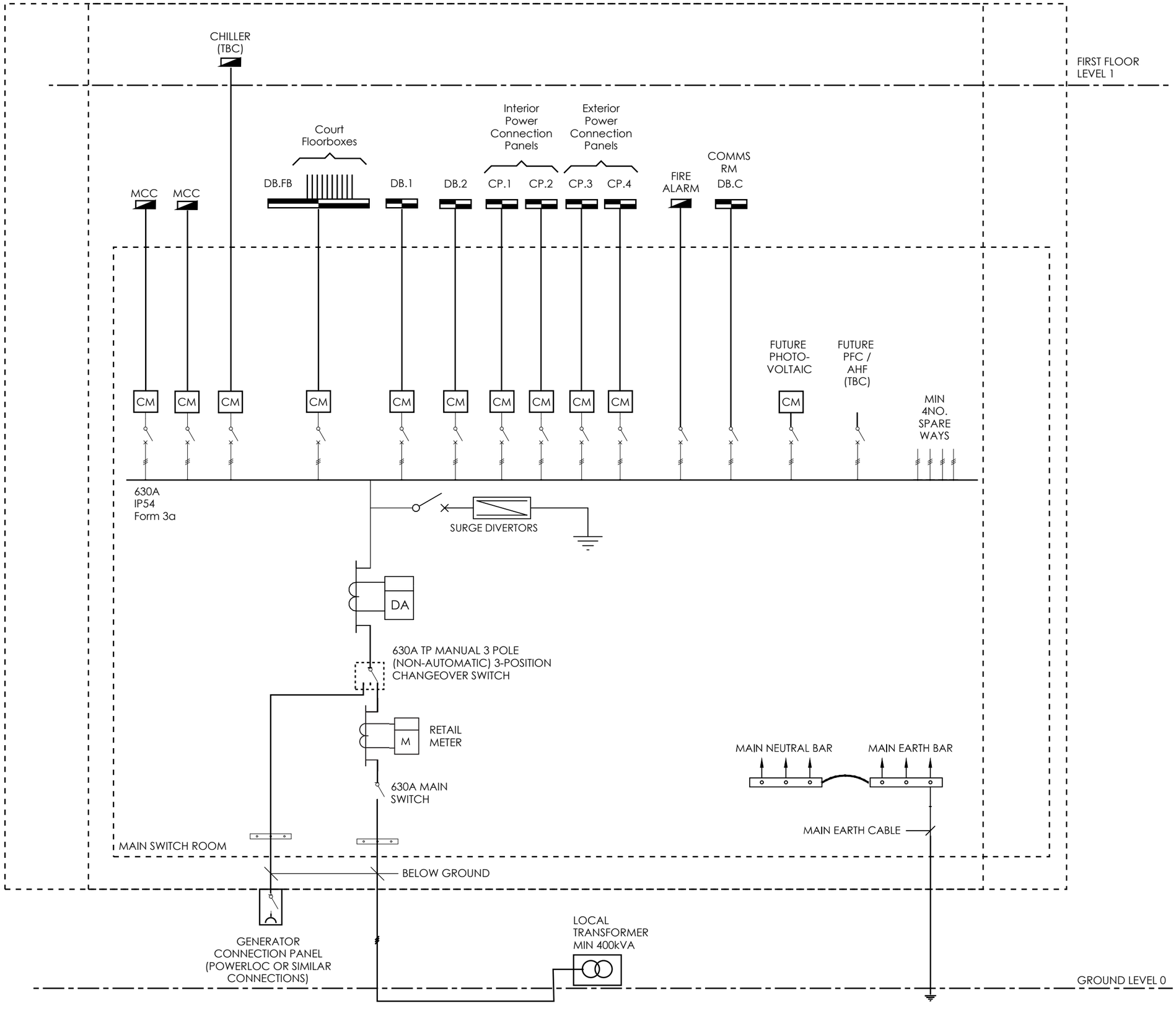
SHEET TITLE:
ELECTRICAL SERVICES
POWER & DATA
FLOOR LAYOUTS

CONCEPT

DESIGNED:	DATE:	ISSUE:
MA	16.07.2026	A
DRAWN: MA	SCALE @ A1: 1:500	

PROJECT No: 310701051

SHEET No: ESK03



LEGEND

- CM — CHECK METER (MODBUS - CONNECTED TO BMS FOR MONITORING)
- MCCB
- ISOLATOR
- DA — DIGITAL ANALYSER (MODBUS - CONNECTED TO BMS FOR MONITORING)
- M — RETAIL METER

ISSUE	AMENDMENT	DATE
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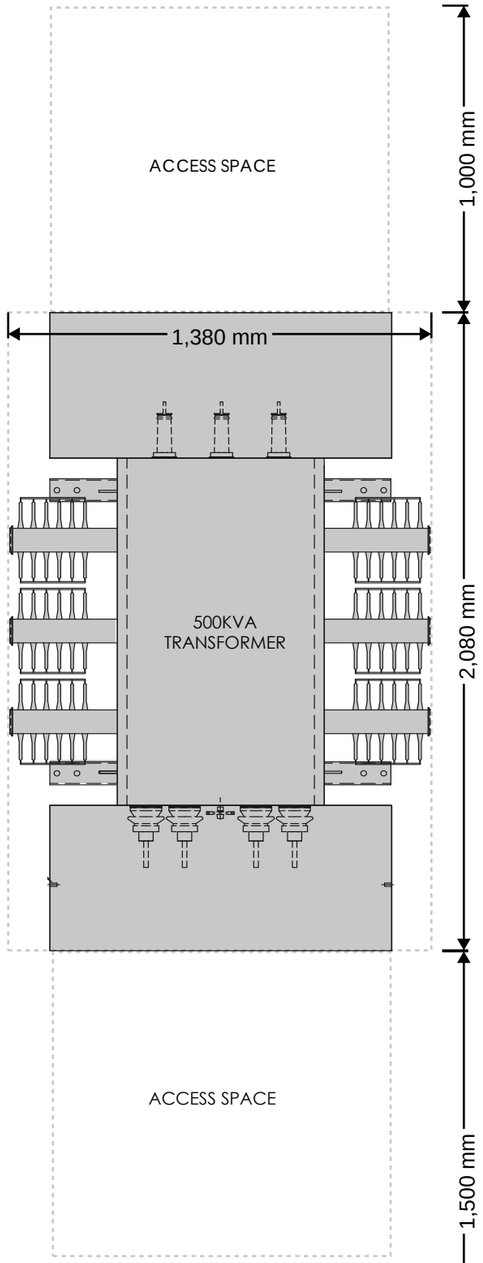
SHEET TITLE:
ELECTRICAL SERVICES
LV SCHEMATIC

CONCEPT

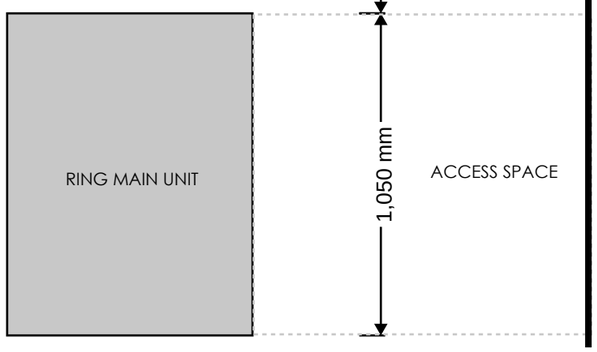
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MA	16.07.2026	A
DRAWN: MA	SCALE @ A1: NTS	

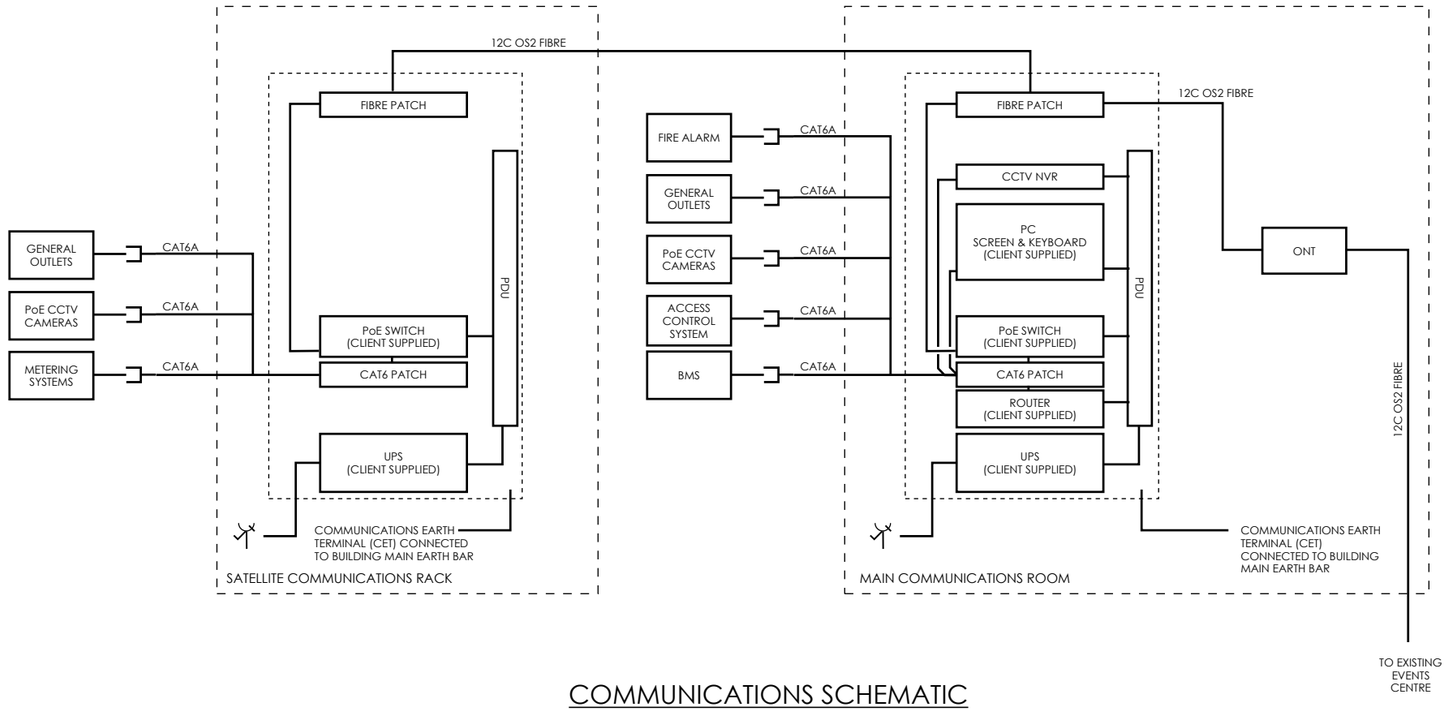
PROJECT No: 310701051

SHEET No: ESK04

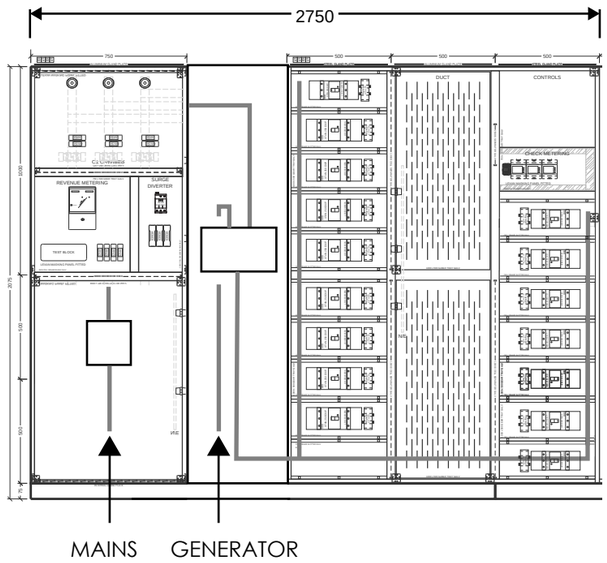


TRANSFORMER AREA LAYOUT





COMMUNICATIONS SCHEMATIC



EXAMPLE MAIN SWITCHBOARD LAYOUT

ISSUE	AMENDMENT	DATE
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SHEET TITLE:
ELECTRICAL SERVICES DETAILS

CONCEPT

DESIGNED:	DATE:	ISSUE:
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PROJECT No:
310701051

SHEET No:
ESK05

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Stantec New Zealand
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7.4.3 H1 Compliance

Stantec

Memo

To:	Queenstown Events Centre Project Team	From:	Alan Callery Level 5, Heartland House 158 Gloucester Street Christchurch 8011 NEW ZEALAND
Project/File:	310701051 Queenstown Events Centre QEC-STN-SU-DTN-0001[A]	Date:	7 August 2026

Reference: NZBC Clause H1/AS2 Compliance - Preliminary Memo

This memorandum summarises the energy efficiency of the Queenstown Events Centre to assess compliance with Clause H1 of the New Zealand Building Code (NZBC) – Energy Efficiency.

Clause H1 Energy Efficiency Acceptable Solution H1/AS2
Energy efficiency for buildings greater than 300 m2

Clause H1/AS2 Energy Efficiency Acceptable Solution (calculation method) will be used to determine H1 compliance for the building. The calculation method compares the heat loss of the proposed “as-designed” building against a reference building, which is a model of the same size, shape and orientation as the proposed building but uses the reference construction R-values from H1/AS2 Table 2.1.2.8.

The roof, wall and window figures above are preliminary recommendations only, intended to be buildable and broadly compliant, pending confirmed wall/roof construction details, a window and door schedule, and elevations from the architect.

Assumptions

The following assumptions have been made:

- The H1/AS2 2nd edition calculation method will be used for H1 compliance. This is the current edition, effective 27 November 2025; the consent is being lodged under this edition rather than the soon to be superseded 1st edition amendment 1.
- The building is classified as Assembly (non-residential, crowd), with an occupied space well in excess of 300 m², designating it a Large Building for which H1/AS2 (rather than H1/AS1) applies.
- Areas are measured on overall internal dimensions per H1/AS2 Paragraph 2.1.2.10, as required for consents lodged under the current edition.
- No heated elements are included in the design e.g. heated floors
- The glazing area is such that a specialised low Solar Heat Gain Coefficient is not expected to be required

Methodology

To conduct the analysis, the following information was referenced:

- 20260728_QEC_Concept Design Backgrounds.pdf (JASMAX, Project No. 215101, Sheets SK-0101–SK-0503) – Received 28/07/26

The building is located in Climate Zone 6 (Queenstown-Lakes District, per H1/AS2 Appendix C) and has occupied space of more than 300m², designating it a Large Building that must meet the performance standards outlined in H1/AS2.

This building will be assessed using the Calculation Method outlined in H1/AS2 – Section 2.1.2.6. The reference construction R-values of the building envelope components (between conditioned and exterior or unconditioned spaces) are taken from Table 2.1.2.8, corresponding to Climate Zone 6.

Table 1. NZBC H1/AS2 2nd Edition, Table 2.1.2.8: Reference building construction R-values

Building element	Climate Zone 6
Roof	R7.0
Wall	R2.4
Floor	R2.6
Windows and doors	R0.42

Table 2. Assessment criteria for the Queenstown Events Centre.

Climate Zone	Zone 6
Slab on ground floor area (m^2)	5,933
Slab on ground floor perimeter (m)	339
Slab area to perimeter ratio	17.5

Table 3. The proposed element build-ups and reference construction R-values used for the reference building.

Envelope Component	Recommended Build Up	Recommended R-Value	Reference R-Value
Roof	160mm PIR insulated roof panel system (warmroof-type), continuous insulation with minimal thermal bridging at purlin fixings.	7.4	7.0
Wall	140mm timber-framed wall (38% framing fraction assumed per AS2 2.1.3.2), R4.3 segment batt infill insulation	2.2	2.4

Reference: **NZBC Clause H1 Compliance - Preliminary Memo**

Envelope Component	Recommended Build Up	Recommended R-Value	Reference R-Value
Slab on Ground Floor	Area to Perimeter Ratio = 17.5 (≥ 10.0 tier). Slab floor, no insulation assumed (conservative – raft foundation vs slab floor still TBC). No underslab or perimeter insulation deemed required	3.4	2.6
Windows	Thermally broken aluminium double-glazed unit, Low-E coating, argon fill, U_g ≈ 1.3 W/m²K. Other glazing specifications (i.e., SHGC, and VLT) TBC.	0.46	0.42
Doors	TBC by architect. Please provide the final R-value of the Opaque Doors.	0.42	0.42

Discussion

The slab-on-ground floor, assessed with no added insulation, already achieves R3.4 against a Zone 6 reference of R2.6 – a comfortable built-in margin from the building's scale (A/P ≈ 17.5).

A full HL_proposed vs HL_reference comparison across all elements is still required before compliance can be confirmed.

Next Steps

- Architect to issue a window and door schedule, elevations, and wall/roof construction details
- Architect to confirm floor type (raft foundation vs slab floor) and actual wall thickness/framing
- Architect to confirm the recommended roof, wall and glazing build-ups above are buildable as proposed
- Stantec to complete the full H1/AS2 heat-loss calculation (HL_proposed vs HL_reference) once the above inputs are confirmed

Yours sincerely

Stantec New Zealand

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Attachment: Attachment

c.

7.4.4 Acoustics

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Project: **QUEENSTOWN EVENTS CENTRE**

Prepared for: **Jasmax**
Level 1/79 Lichfield Street
Christchurch Central City
Christchurch 8011

Attention: **Paul Lelieveld**

Report No.: **Rp 001 20250603**

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Document control

Status:	Rev:	Comments	Date:	Author:	Reviewer:
Approved			12 Aug 2026	M Morrow	J Farren

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1.0 INTRODUCTION

This report provides high-level commentary on the acoustic recommendations associated with the proposed Queenstown Events Centre. Our recommendations consider the base scenario where the facility is used only for sports or exhibition-type events. Indicative construction uplifts are presented for conference and concert scenarios.

2.0 DESIGN CRITERIA

2.1 The site is within the Community Purposes and the Queenstown Airport Outer Control Boundary

In addition to the general noise zoning requirements for Community Purposes, there are also maximum internal sound level requirements that form part of both the site designation (29) and activities sensitive to aircraft noise.

We would highlight that the Community Purposes zone is considered an Open Space and Recreation Zone. Consequently, stringent noise emission limits apply to the open space land immediately west of the development. *However, we have assumed, at this stage, an exemption (written approval) from the night-time noise limits will be forthcoming for these open space sites provided that compliance with the daytime noise limit is achievable.*

Table 1: Queenstown Lakes Proposed District Plan (QLPDP) noise limits

Rule	Parameter		Criteria
38.10.12 DP 29 C.22.8	Indoor design sound level from aircraft noise[3]		40 dB L_{dn}
36.6.2	Indoor design sound level from mechanical services		30 – 35[1] dB $L_{Aeq,30\,secs}$
	Noise emission to other sites:		
36.5.2	Residential zones	08:00 to 20:00	50 dB $L_{Aeq,\,15\,mins}$
	Open Space and Recreation Zones (Community Purposes)	20:00 to 08:00	40 dB $L_{Aeq,\,15\,mins}$
15.5.8	Local shopping centre zones[2]	08:00 to 22:00	60 dB $L_{Aeq,\,15\,mins}$
		22:00 to 08:00	50 dB $L_{Aeq,\,15\,mins}$ 75 dB L_{AFmax}

1 Applies to Critical Listening Environments

The lower limit is at low air flow setting and the upper limit at high air flow setting. Levels are to be measured 2m away from any grille or diffuser.

2 There are no explicit rules for noise generated within the community purposes zone and received in the local shopping centre zone. The presented limits are the limits imposed on sites within the local shopping centre zone. We consider that compliance with these limits would be appropriate within these zones. Though we would highlight that received noise levels are likely to be controlled by compliance at more noise sensitive receiving sites.

3 We have reviewed the available noise contours and have determined that the highest incident level on the building would be 62 dB L_{dn}.

2.2 The QLPDP may require mechanical ventilation

As highlighted above, Rule 36.6.2 stipulates noise limits on mechanical ventilation systems. However, this Rule is aimed at ensuring that noise and ventilation are both adequately addressed for Critical Listening Environments within the Airport Outer Control Boundary.

The QLPDP defines a Critical Listening Environment as:

> *any space that is regularly used for high quality listening or communication for example principle living areas, bedrooms and classrooms but excludes non-critical listening environments.*

While it highlights residential and educational facilities in particular, any space where speech communication is paramount would trigger this requirement. While this would not be applicable to sporting events, it would apply if the centre hosted conferences or concerts.

2.3 The overall design criteria will vary depending on the range of event types proposed

In addition to the internal sound level requirements of the QLPDP, there are additional acoustical design criteria parameters that should be considered as part of the design. We have categorised the proposed range of event types into three options and summarise the recommended criteria for each option in Table 2.

Given the large volume of the space, we consider that it would be extremely difficult to design the space for a wide range of musical and theatre performances. From the proposed event mode layouts we assume that the focus of concert modes is more geared towards amplified music, rather than theatre or unamplified music productions. Therefore, we have presented achievable design criteria appropriate for amplified music concert events only.

Table 2: Recommended design criteria for various event types

Parameter	Criteria		
	Sports / Exhibition / Banquet	Conference	Concert (amplified music)
Occupied reverberation Time (RT)[6]	≤ 2.5 secs	1.4 ± 0.2 secs	1.4 ± 0.2 secs
Internal sound levels			
Building Services [1, 2]	NC 40 - 45	NC 30 - 35	NC 35 - 40
Aircraft	40 dB L_{dn}	30 dB L_{dn}	35 dB L_{dn}
Overall [2, 3, 4]	45 – 50 dB L_{Aeq}	35 – 10 dB L_{Aeq}	40 – 45 dB L_{Aeq}
Rain noise[5]	≤ 50 dB L_{Aeq}	≤ 35 dB L_{Aeq}	≤ 40 dB L_{Aeq}
Sound emissions (received in residential zone)	Daytime: 50 dB L_{Aeq} Night-time: 40 dB L_{Aeq}		

1 NC: Noise Criteria measured between and including the octave band centre frequencies from 63 Hz to 4 kHz. NC is a method used to assess background noise in a number of octave bands and assign a single number. L_{Aeq} to be measured as a 30 second average

2 Where criteria are presented as a range, the lower value in the range is the design objective and the higher value is the maximum allowable level on site.

3 The space criteria for continuous noise must make allowance for the cumulative effects of noise from all HVAC services including plant break-in noise, downduct noise and air-regenerated noise.

4 These internal limits are applicable with windows and doors closed.

5 Based on a rainfall rate of 15 mm/hr occurring an average of 5 min/month

6 These values apply to the mid-frequency reverberation time (average of 500 Hz and 1 kHz octave bands). The reverberation time at lower frequencies (125Hz and 250 Hz octave bands) should not be more than 25% higher than the tabled values.

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3.0 BUILDING ENVELOPE DESIGN CONSIDERATIONS

3.1 Uplifts to the roof/ceiling construction would be required for conference and concert events

We have considered what the likely construction requirements would be to achieve the design criteria for each option. Table 3 provides a summary of the expected construction arrangements necessary to achieve the design criteria for a sports/banquet/exhibition option. This is based on an external aircraft sound level of 62 dB L_{dn} and a maximum internal sound level of 85 dB L_{Aeq}.

Construction uplifts (additional treatments above those listed for the baseline scenario) are provided for conferences and concerts.

We would highlight that the conference scenario uplifts are recommended to the roof/ceiling construction to reduce aircraft noise break-in that could cause disturbance to conference events.

For the concert scenario, the roof/ceiling uplifts consider both noise break-in and breakout. This is based on a maximum internal reverberant sound level of 95 dB L_{Aeq}.

We would highlight that these considerations are very high-level and are based on preliminary calculations only. We present these for costing purposes to provide an approximate cost uplift between each option for the main acoustic considerations.

Table 3: Building envelope constructions

Building element	Baseline design	Conference construction uplifts	Concert construction uplifts
Roof/ceiling	Warm roof system + Suspended absorptive ceiling (see Section 5.0 for further details)	N/A (as per baseline)	2x13 mm plasterboard fixed to the underside of the purlins **in addition** to an absorptive ceiling
Walls (Concrete option)	Precast concrete panels with windows provided at high level only	N/A (as per baseline)	N/A (as per baseline)
Walls (Warm wall option)	Warm wall system (100 mm thick) 90 mm timber framing + fibrous batts in the framing cavity 1x13 mm standard plasterboard lining	N/A (as per baseline)	2x13 mm high density plasterboard internal lining to north, south and western wall
External doors	STC 25	STC 30	STC 35
Roller shutters	Permitted	May be permitted	Not permitted

3.2 External doors to the events hall will compromise the sound insulation

We note that hinged doors and roller shutters are proposed in the western and southern elevation of the events hall. We can maximise the sound insulation performance of the doors by providing proprietary rated door sets. However, roller shutters cannot be well sealed around their perimeter and would hinder compliance with the noise emission limits at the residential sites for potential conference events and definitely concert events.

We have indicated the anticipated suitability of doors and roller shutters for each of the event mode scenarios.

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4.0 MECHANICAL SERVICES CONSIDERATIONS

We understand mechanical ventilation is not being considered as part of the baseline design. Nonetheless, we have highlighted the aspects of the mechanical services system that would require consideration for each scenario.

We understand that an airflow of 20 m³/s will be required in all scenarios. This airflow will be split across two AHUs. The current design has the return air for the AHUs ducting directly into the sports hall. This arrangement would be acceptable for the baseline scenario, noting that acoustic attenuators will be required. However, for the uplift options it would be necessary to incorporate additional ducting to provide further attenuation.

On the supply side, there will be some ducting to bring the supply up to high level within the sports hall. This ductwork can be specified with internal fibrous duct lining as a cost effective attenuation solution.

Table 4 summarises the main acoustic aspects of the mechanical services system that would impact the design and spatial requirements for the necessary duct sizing and attenuation.

Table 4: AHU system

Duct parameter	Baseline design	Conference construction uplifts	Concert construction uplifts
Maximum permitted duct velocities	Main ducts: 6.5 m/s Run-out ducts: 5.0 m/s	Main ducts: 4.5 m/s Run-out ducts: 3.0 m/s	Main ducts: 5.5 m/s Run-out ducts: 4.0 m/s
Attenuation	Supply: 900 mm long attenuator + all ductwork with minimum 50 mm thick internal linings Return: 2400 mm long attenuator	Supply: Baseline attenuator increased to 2400 mm long Return: Baseline attenuator increased to 2x2400 mm long attenuators + Minimum 5 m of 50 mm thick internal lined duct	Supply: Baseline attenuator increased to 1200 mm long Return: Baseline attenuator increased to 3600 mm long + Minimum 5 m of 50 mm thick internal lined duct
Air distribution sound power levels	Supply: 50 dB L_{WA} / metre Fabric duct proposed Return: NC 40	Supply: NC 25 Fabric duct likely unsuitable and solid duct with discrete diffuser would be required. Return: NC 30	Supply: NC 30 Fabric duct likely unsuitable and solid duct with discrete diffuser would be required. Return: NC 35

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5.0 ROOM TREATMENT CONSIDERATIONS

5.1 The events hall will require absorptive treatment to the walls and ceiling

The architectural intent at this stage is to provide a woodwool suspended ceiling system within the events hall.

This ceiling system in combination with absorptive wall finishes at low level will be capable of controlling reverberation. As part of our calculations we have considered the number of people that would be within the space and have provided approximate treatment areas based on achieving the occupied reverberation times in Table 2.

Table 5 outlines our recommendation for each scenario indicating the additional treatment areas required for the uplifted design solutions.

Figure 1 illustrates the recommended location for absorptive finishes within the events hall.

5.2 Absorptive ceiling tiles are recommended to the wellness, meeting and office spaces

We recommend that ceiling tiles achieving minimum ratings of NRC 0.85 and CAC 35 are provided to the:

- Wellness suite
- Multifunction room
- Shared office
- Kitchen
- Meeting room

We would highlight that the sound insulation rating (CAC rating) of the ceiling tiles may have to increase depending on the construction arrangement of the walls and whether there is a common ceiling cavity between two spaces.

5.3 The lobby will have a similar ceiling to the events hall

We understand that similar ceiling panels to those proposed within the events hall will be provided in the lobby space. As for the other community spaces, these ceiling panels should achieve ratings of NRC 0.85 and CAC 35.

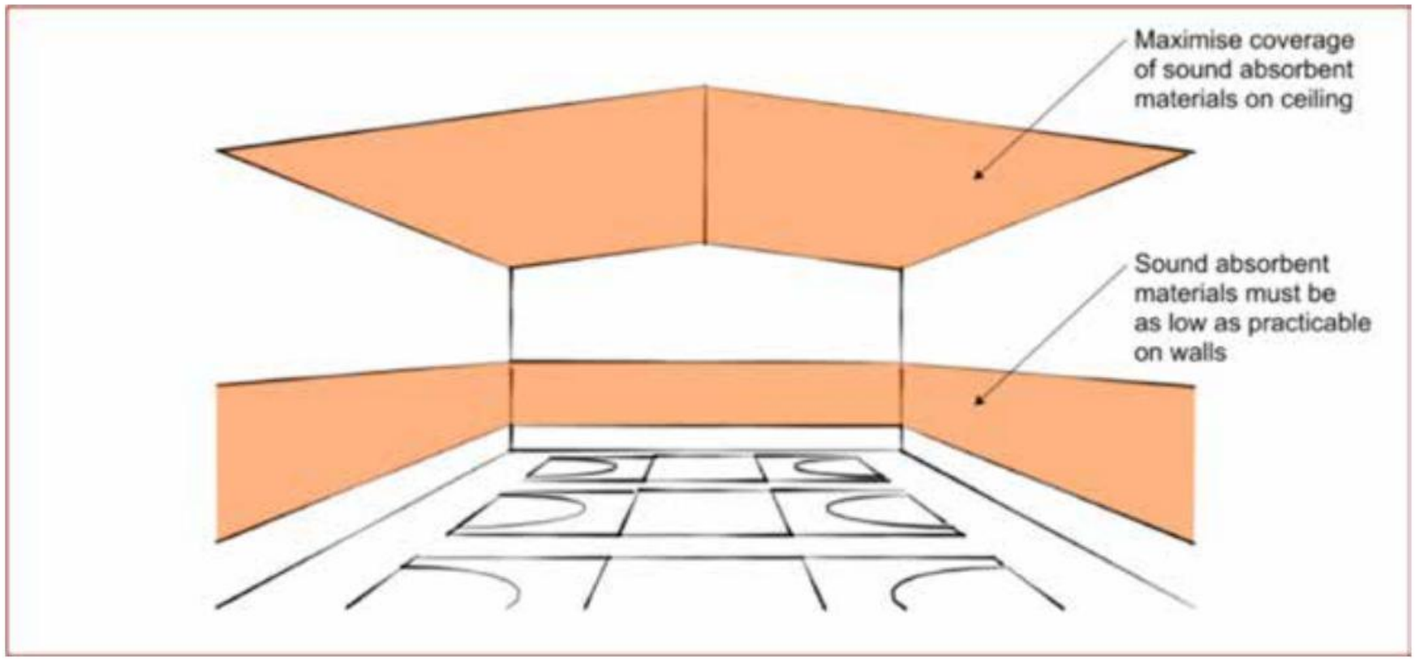
This would be achieved with Heradesign Fine or Superfine with a 50 mm thick and 50 kg/m³ dense fibrous batts provided in the cavity behind and an overall cavity depth of at least 200 mm.

We expect that the lobby could be used as a pre-function/breakout space associated with other activities within the events hall. This may require additional absorptive treatment to the walls depending on the intended use.

Table 5: Events hall room finishes

Building element	Baseline design	Conference construction uplifts	Concert construction uplifts
Expected number of people	50 - 1500	2000	2000
Ceiling	Suspended absorptive ceiling panels (Heradesign) covering 100 % of the ceiling area on minimum 200 mm cavity Ceiling panels should achieve minimum performance ratings of NRC 0.85 and CAC 35 Heradesign Fine or Superfine with a 50 mm thick and 50 kg/m³ dense fibrous batts provided in cavity behind with an overall cavity depth of at least 200 mm would achieve these requirements.	N/A (as per baseline)	N/A (N.B. plasterboard noise control ceiling required – refer Table 3)
Walls	275 m² of minimum 50 mm thick broadband fibrous panels (e.g. Autex Quietspace) 300 m² of Perforated/Slatted panels (minimum 20% open area) with 50 mm thick fibrous backing	An **additional** 275 m² of 50 mm thick broadband fibrous panels + An **additional** 300 m² of Perforated/Slatted panels	As per conference uplift

Figure 1: Absorptive treatment locations (Sport NZ Sport & Recreation Facility Development Guide)



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6.0 INTERNAL PARTITION CONSIDERATIONS

6.1 The partition sound insulation rating will vary depending on room adjacencies

For the supporting spaces around the sports hall, it is important that we target suitable levels of sound insulation to minimise disturbance between adjoining spaces. This is particularly important between the wellness centre spaces where concurrent activities will occur, with one potentially being high noise generating (e.g. spin class) and the other being highly noise sensitive (e.g. yoga).

We have provided a marked-up drawing of the current plan indicating our recommended sound insulation performance of the separating partitions. These can be read in conjunction with Table 6 which provides suitable GIB partition constructions for each STC rating.

At this stage we assume:

- All walls around the wellness centre rooms and the multipurpose room will be full height
- All other walls will penetrate the ceiling level by at least 50 mm (i.e. ceilings will abut the walls within each room)
- All stud spacings will be at minimum 600 mm centres

Table 6: GIB wall construction options

STC	Suitable GIB systems		
	Single stud	Staggered stud	Double stud
40	GSS132 GST103		
45	GST134 GNT104		
50	GNT134[1] GNS134	GBSA 30s[2]	GBTLA 30a[2]
55		GBSA 30s	GBTLA 30a GBSA 30b

1 This construction has a performance of STC 48. This falls slightly short of our recommendation but would likely be suitable in most instances

2 The linings on this construction could be reduced to 1x13mm GIB Standard each side and achieve STC 50

6.2 An operable wall will offer limited sound insulation performance

An operable wall is proposed within the multipurpose room. We recommend that an operable partition from a reputable supplier, with a minimum laboratory performance of STC 47 be specified. This is likely to provide an on-site installed performance of FSTC 35 - 37.

This is a relatively low level of sound insulation and concurrent activities may have to be carefully managed to minimise disturbance.

It is important that the operable wall is well sealed and includes an expandable end to accommodate minor variations in set out. Balloon compression seals should be avoided.

Table 7 provides a range of suitable operable walls for consideration.

Table 7: Operable walls

Manufacturer	Product	STC
Hufcor	Series 8000	48
Hufcor	Series 8000	49
Hufcor	Series 8000	51
Hufcor	Series 5000	49
Lotus	Series 100 (min. 37 kg/m²)	49
Trans-Space	SpaceSeal 500 Series	47
Dorma	Variflex	49

6.3 Doors to noise-sensitive and noise-generating spaces should be sound rated

We have also indicated the recommended door sound insulation ratings on the mark-up in Figure 2. These range between STC 30 – 40.

STC 30 – 35 can be achieved with solid core doors (24 – 29 kg/m²) with compression seals to the head, threshold and jambs of the doors. Table 8 provides a range of suitable compression seals.

An acoustic proprietary door set would be required to achieve STC 40. Pacific Doors, Hallmark, Restruct and NAP (Cooke industries) all have tested door systems that can achieve this performance.

In all instances, the door threshold seal should abut a solid surface. We recommend a threshold plate such as Raven RP66 where carpet runs below the door.

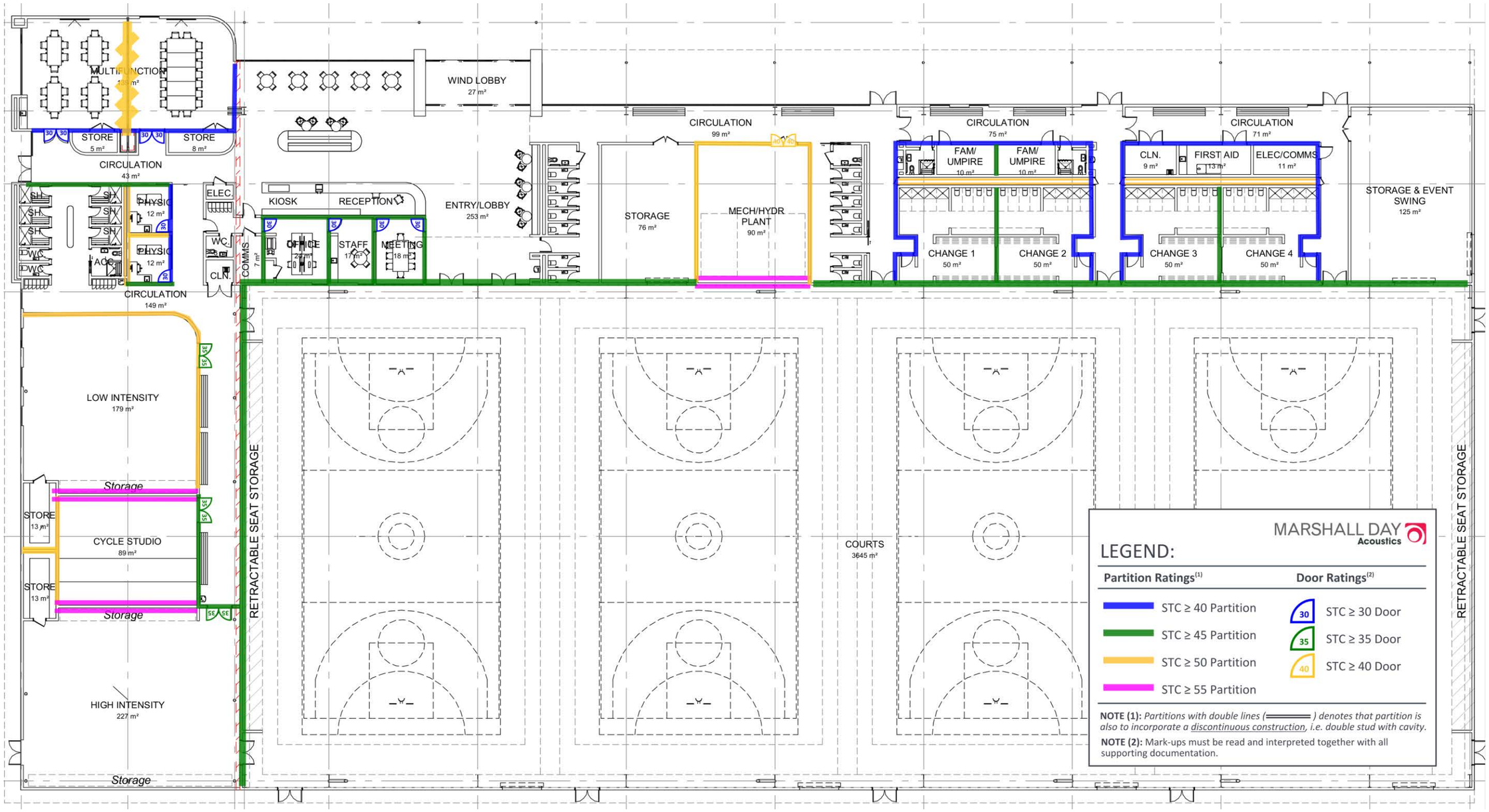
Undercuts and door grilles should not be specified for STC rated doors.

Table 8: Door seals

Manufacturer	Head and Jambs seals	Threshold seals	Meeting stile
Kilargo	IS 1212 IS 1515	IS 8010Si	IS7071si (double row)
Lorient	LAS 1212 LAS 1515		
Schlegel	Aquamac 21 Aquamac 124 Aquamac 836		
Raven	RP 10Si RP 24Si RP 78Si RP 120 RP 124 RP 150	RP 8Si RP 38 RP 38Si RP 70 RP 127Si	RP73 RP71Si (double row)

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Figure 2: Sound insulation mark-up



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APPENDIX A GLOSSARY OF TERMINOLOGY

Frequency	Sound occurs over a range of frequencies, extending from the very low (e.g. thunder) to the very high (e.g. mosquito buzz). Measured in units of Hertz (Hz). Humans typically hear sounds between 20 Hz and 20 kHz. High frequency acuity naturally reduces with age most adults can hear up to 15 kHz.
Hertz (Hz)	The unit of frequency, named after Gustav Hertz (1887-1975). One hertz is one pressure cycle of sound per second. One thousand hertz – 1000 cycles per second – is a kilohertz (kHz).
Absorption coefficient	A measure of the proportion of sound energy absorbed by a material. It is represented by α. An α of 0 means it is fully reflective and an α of 1 means it is fully absorptive at the specified frequency.
NC	Noise Criteria. A single number rating based on the sound level in octave bands from 63 Hz to 8 kHz. Generally used to assess sound from mechanical services.
RT	Reverberation Time. Describes how quickly sound decays within a room and is dependent on its volume and sound absorption. Measured in seconds – the more reverberant the room, the higher the RT.
Sound insulation	The ability of a material or construction to reduce sound travelling through it.
CAC	Ceiling Attenuation Class. A single figure rating of the sound insulation of a ceiling system
STC	Sound Transmission Class. A single number system for quantifying the transmission loss through a building element. The measured transmission loss, in third octave bands from 125 Hz to 4 kHz, is compared to a standard reference curve to determine the single number value. Can only be measured in laboratory conditions
A-weighting	A set of frequency-dependent sound level adjustments that are used to better represent how humans hear sounds. Humans are less sensitive to low and very high frequency sounds. Sound levels using an "A" frequency weighting are expressed as dB LA. Alternative ways of expressing A-weighted decibels are dBA or dB(A).
dB	Decibel. The unit of sound level.
L_{Aeq}	The equivalent continuous A-weighted sound level. Commonly referred to as the average sound level and is measured in dB.
L_w	Sound Power Level. The calculated level of total sound power radiated by a sound source. Usually A-weighted i.e. L_{WA}.

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Queenstown Events Centre Indoor Courts & Carpark

Parking Assessment Technical Note

Prepared for	Paul Lelieveld and Chris Jack, Jasmax
Project number	JL-J004
Revision	B
Issue date	17 July 2026
Prepared by	Dave Smith, Technical Director – Transportation Planning
Reviewed by	Ann-Marie Head, Associate Director – Transportation Engineering

1. Introduction

Abley is providing transportation advice to the Queenstown-Lakes District Council (Council) for the Queenstown Events Centre (QEC) Indoor Courts & Carpark design project, as part of the Jasmax-led team.

In 2019 a draft Masterplan was prepared to expand the QEC in response to increased growth in the Queenstown-Lakes District. WSP prepared an access and parking assessment for Council with their findings presented in a memorandum[1]. Key conclusions in the memorandum were (copied as excerpts verbatim):

- *current parking provisions are above those required by the operative and proposed district plan*
- *at peak times, demand for parking at QEC currently exceeds the amount provided on site*
- *for the proposed build out, under a medium mode shift scenario (to be achieved through the Queenstown business case) it is expected that there will be demand for 580 parking spaces*
- *it is unlikely to be cost-effective to construct a new access…the eventual form of access to QEC is likely to be driven by changes in the highway, rather than at QEC itself.*
- *there is an opportunity to form a new local connector from Kawarau Road to Grant Road along the southern boundary of QEC to improve flow in Frankton Flats and take traffic off the SH network.*

Abley have been asked to update the assessment undertaken by WSP based on updated future build out plans for the QEC. The revision A version of this technical note documented this assessment based on traffic data collected in December 2025. Acknowledging that the QEC was not operating at full capacity at this time, further traffic data was collected in February 2026 and the assessment revisited. This revision B technical note supersedes revision A based on the busier assessment period.

[1] QEC Masterplan Access and Parking Assessment Technical Note Issue 2 dated 4 December 2019

2. Queenstown Events Centre Development Scenario

Within the previous scope of this project it was proposed that four indoor courts (with storage area), a wellness centre, entry foyer and additional carparking will be developed. This is shown on the plan prepared by Boffa Miskell (dated 12 June 2025) in Figure 2.1 below.



Figure 2.1 QEC Indicative Site Plan (source:Jasmax received on 8th June)

The design is still evolving with single storey and two storey options being considered of approx 5,800 sqm GFA at the time of writing. To be conservative Abley have assumed 6,000 sqm GFA including four indoor courts (approx 3,600 sqm), and a health, fitness and wellness centre (approx 1,000 sqm GFA) with lobby, change rooms, bathrooms and storage taking up the remaining space (up to 1,400 sqm GFA other).

3. Traffic generation

3.1 Calculating current traffic generation rate

Traffic volumes were collected on Joe O'Connell Drive from 12th February – 18th February 2026 at the QEC access to understand existing traffic generation and parking demand for the QEC. This has then been analysed to understand the current parking and trip rates as a function of the level of activity on the site (note that the data was collected by direction).

The hourly two-way traffic count is shown in Table 3.1 below.

Table 3.1 Hourly two-way traffic count on Joe O'Connell Drive

Hr starting	Thu	Fri	Sat	Sun	Mon	Tue	Wed	5 day ave	7 day ave
0000	0	3	3	2	2	0	2	1	2
0100	7	1	1	2	2	2	4	3	3
0200	2	0	0	2	0	0	0	0	1
0300	0	2	2	0	0	0	3	1	1
0400	0	0	0	0	0	0	0	0	0
0500	77	53	2	0	52	87	62	66	47
0600	119	131	4	6	135	137	118	128	93
0700	154	134	58	35	139	139	140	141	114
0800	146	168	218	89	153	203	195	173	167
0900	181	216	257	153	199	200	223	204	204
1000	178	210	316	193	204	294	243	226	234
1100	207	230	295	178	193	206	166	200	211
1200	194	231	221	134	199	207	160	198	192
1300	119	189	146	176	149	157	119	146	151
1400	91	137	122	139	144	142	139	131	131
1500	209	239	135	116	401	310	290	290	243
1600	253	247	152	127	342	328	311	296	251
1700	332	283	179	120	334	458	383	358	298
1800	292	210	113	107	356	381	341	316	257
1900	201	138	64	84	176	233	252	200	164
2000	151	129	50	28	167	161	216	165	129
2100	49	54	11	10	67	36	51	51	40
2200	7	14	10	8	9	4	6	8	8
2300	7	7	4	2	4	8	5	6	5
Total	2976	3024	2362	1710	3426	3692	3428	3309	2945

A summary of the two-way traffic count data follows. There are:

- An average of 3309 vehicle movements per weekday (2976-3692 on any given day)
- Fewer vehicle movements on weekends with 2362 and 1710 on Saturday and Sunday
- Weekday morning peak hour is 10-11am with 226 two-way movements per hour
- Weekday evening peak hour is 5-6pm with 358 two-way movements per hour
- Weekend peak hour is Saturday 10-11am with 316 two-way movements

- The peak hour of the week were 5-6pm Tuesday[2] with 458 two-way movements per hour

Based on the current 8,650 sqm GFA this equates to a peak hour trip rate of 2.6 and 4.1 trips per 100sqm GFA in morning and evening peak hour respectively. The weekend peak hour trip rate is 4.6 trips per 100sqm GFA.

This compares relatively well with industry standard trip rates. Trips Database Bureau[3] includes surveys with an average peak hour trip rate of 4.4 per 100 sqm GFA for aquatic centres on weekends and 3.7 per 100 sqm GFA for gymnasiums on weekends, although there are no rates for larger events centres with combined activities. The Guide to Transport Impact Assessment guidelines[4] publish rates of 3.6 and 2.9 trips per 100 sqm GFA for fitness centres on weekdays and weekends. The US-based ITE Trip Generation Manual[5] publish a rate of 3.6 trips per 1000 square feet or multi-purpose recreation centres - this is equivalent to 3.3 trips per 100 sqm GFA. It is concluded that the observed QEC trip rates are broadly in line with standard industry rates.

3.2 Estimating future traffic generation

When the additional 6,000 sqm GFA of development as part of this project is included, the same calibrated trip rates have been applied to estimate traffic flows at the access as follows:

- Average vehicle movements per weekday will increase from 3,310 to 5,605 vehicles per day
- Weekends will increase to 4,000 and 2,900 vehicles per day for Saturday and Sunday
- Weekday morning peak hour increases from 226 to 383 two-way movements per hour
- Weekday evening peak hour increases from 358 to 606 two-way movements per hour
- Weekend peak hour (Saturday 10-11am) increases from 316 to 536 two-way movements

This is considered a conservatively high estimate as some additional floor area will be ancillary – that is it will not generate additional traffic demand itself. It is estimated that approximately 2,000 of the 6,000 sqm GFA (one-third) will be ancillary and is therefore discounted from the traffic and parking demand assessments.

Further justification for applying this discounting relates to wider trip rate trends which demonstrate that as floor area for various activities increase, the overall trip rates as a function of GFA reduces. This is well documented in NZTA research for retail activities such as supermarkets and shopping centres[6]. However it is noted that there is insufficient data relating to recreational activities to calibrate a discount rate directly for events centres. Nonetheless Abley anticipate that a similar trend is an intuitive outcome for the QEC but recommend ongoing monitoring of trip generation and parking activity as QEC develops.

On the basis of the above one-third discount, the updated future trip generation is estimated as follows:

- Average vehicle movements per weekday will increase from 3,310 to 4,890 vehicles per day
- Weekends will increase to 3,450 and 2,500 vehicles per day for Saturday and Sunday
- Weekday morning peak hour increases from 226 to 330 two-way movements per hour
- Weekday evening peak hour increases from 358 to 524 two-way movements per hour
- Weekend peak hour (Saturday 10-11am) increases from 316 to 463 two-way movements

[2] It is understood this coincides with a regular weekly athletics activity rather than any one-off event
[3] Online repository of New Zealand and Australian trip and parking rates available to subscribing members
[4] Published by New South Wales government, TS 00085 | Version 1.1.
[5] Published by Institute of Transportation Engineers, 10th Edition
[6] Refer section 5 of https://www.nzta.govt.nz/assets/resources/research/reports/453/docs/453.pdf

4. Parking Assessment

4.1 Parking Occupancy Thresholds

Industry guidance and best practice generally refers to a parking occupancy threshold of 85%, citing this as generally being an upper limit on desirable occupancy levels. Ableby agrees that 85% is a target parking occupancy above which traffic circulation will be high as motorists 'hunt' for an available car park and motorists may not be able to find an available car park space at all. Non-compliant parking may also be widespread and illegal parking common.

The occupancy of 85% is considered an optimal 'peak' parking occupancy by Victoria Transport Policy Institute[7]. The NZ Transport Agency "National Parking Management Guidance"[8] also includes multiple references to an 85% occupancy threshold. It is further noted that if peak parking occupancies are well below this target there is inefficient use of available space within a site allocated exclusively for parking.

Applying an 85% occupancy threshold (as opposed to a theoretical 100% threshold) also means there is space available for occasions when there is a short peak in demand as was evidenced at 6pm on the Thursday of the survey week. Higher occupancy rates can also be supported where there is excellent wayfinding (including where supported by technology) to direct vehicles to available spaces.

This assessment applies the 85% occupancy level as a threshold above which mitigation is required to address adverse effects associated with a lack of available public parking for future Queenstown Events Centre staff and visitors.

4.2 Calculating current parking availability and demand rate

Recent aerial photography has been sourced online and analysed to determine the number of parking spaces and space allocation for car parking on-site. There are currently three key parking areas as follows:

- Cricket nets carpark has 74 spaces
- Main carpark section to the south of the building (adjacent to loading area) has 29 spaces
- Main carpark (the remainder) has 218 spaces

A total of 321 parking spaces are available with an average space allocation (including access and manoeuvring space, and landscaping) of 30 sqm per parking space. It is noted that this is slightly different to the 326 spaces on site at the time of the 2019 WSP report.

The directional traffic volumes collected on Joe O'Connell Drive from 12th February – 18th February 2026 at the QEC have also been analysed to determine parking occupancy for the QEC. This has been achieved by subtracting cumulative outbound traffic from cumulative inbound traffic between 5am and 10pm. Traffic flows outside of these hours were negligible (between 0 and 7 two-way movements per hour) and it is understood all facilities are closed.

The hourly parking occupancy is shown in Table 4.1 with percentage occupancy in Figure 4.1 below.

[7] "Parking Management Strategies, Evaluation and Planning" T. Litman, Victoria Transport Policy Institute, (2024). https://www.vtpi.org/park_man.pdf
[8] "National parking management guidance", Waka Kotahi NZ Transport Agency, (2021). https://www.nzta.govt.nz/assets/resources/national-parking-management-guidance/national-parking-management-guidance.pdf

Table 4.1 Parking occupancy within the QEC site (inferred from traffic counts)

Hr starting	Thu	Fri	Sat	Sun	Mon	Tue	Wed	5 day ave	7 day ave
0500	71	47	2	0	48	77	56	60	43
0600	110	110	4	0	109	131	100	112	81
0700	88	86	42	19	105	85	98	92	75
0800	128	120	179	76	124	146	157	135	133
0900	185	198	246	145	209	226	242	212	207
1000	189	196	213	148	202	224	204	203	197
1100	168	179	148	121	191	236	184	192	175
1200	118	182	107	127	157	199	155	162	149
1300	95	169	85	111	153	160	160	148	133
1400	90	132	99	118	143	162	126	131	124
1500	180	187	108	84	294	264	219	229	191
1600	235	207	112	73	236	246	252	235	194
1700	226	188	89	79	201	212	265	218	180
1800	222	146	71	54	189	193	223	195	157
1900	159	132	38	23	171	150	202	163	125
2000	46	43	4	2	58	41	44	46	34

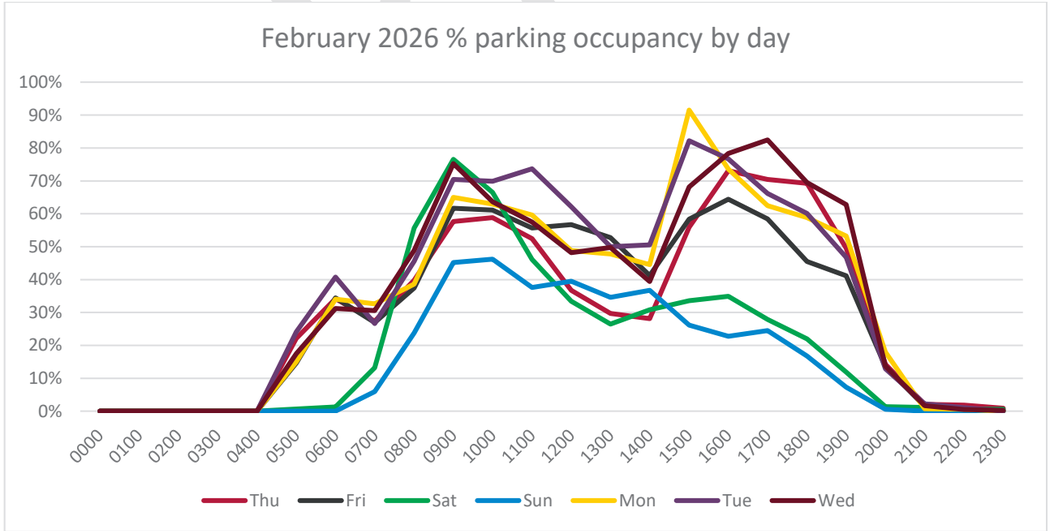


Figure 4.1 Observed percentage parking occupancy

Taking into consideration the current activity on site and level of parking provision observed in February 2026 the peak parking demand rates based on the current 8,650 sqm GFA on-site are as follows:

- The average weekday peak occurs 9-10am and 4-5pm with 212 and 235 of 321 spaces occupied which equates to 66% and 73% occupied.
- Weekday parking demand is relatively consistent across the working day generally in the range of 50-70% occupied and slightly lower between 1-3pm at 40-45%.
- The highest daily peak was Monday 3-4pm with parking at 92% occupancy which sits slightly higher than the ideal 85% occupancy.
- Saturday parking demand peaked between 9am-10am at 77% occupied and tapering off for the remainder of the day.
- Sunday parking demand peaked between 9am-11am at 45% and 46% occupied and tapering off for the remainder of the day.

Based on the current 8,650 sqm GFA this equates to a weekday peak hour parking demand rate of 2.4 and 2.7 spaces per 100sqm GFA for both morning and evening peak hour. Weekend peak parking demand is slightly higher at 2.8 trips per 100sqm GFA.

This compares relatively well with industry standard parking rates. Trips Database Bureau[9] includes surveys with an average peak hour parking rate of 1.6 for aquatic centres on weekends and 2.9 for gymnasiums on weekends, although there are no rates for larger events centres with combined activities. Equivalent weekday peak parking rates are variable at 1.8 for aquatic centres and 5.4 for gymnasiums. The Guide to Transport Impact Assessment guidelines[10] publish parking demand rates of 3.0 as a "historic rate" for fitness centres. It is concluded that the observed QEC trip rates are broadly in line with standard industry rates.

4.3 Estimating future parking requirements

When the additional development included as part of this project is included the total GFA will increase by 6,000 sqm to 14,650 sqm GFA. If the same calibrated parking demands were applied, an estimate of the future parking demand is as follows:

- The current average weekday peak parking demand would increase from 235 to 398 spaces which is well in excess of 100% parking occupancy, exceeding current capacity by 77 spaces.
- The current weekend peak parking demand would increase from 246 to 416 spaces which also exceeds 100% parking occupancy, exceeding existing capacity by 95 spaces.

This is considered a conservatively high estimate as some additional floor area may be considered to be ancillary – that is it will not generate additional traffic demand itself. It is estimated that approximately 2,000 of the 6,000 sqm GFA will be ancillary and is therefore discounted from the parking demand assessment. The updated future parking demand is estimated as follows:

- The current average weekday peak parking demand would increase from 235 to 344 spaces which exceeds capacity by 23 spaces.
- The current weekend peak parking demand would increase from 246 to 359 spaces which exceeds capacity by 38 spaces.

In order to limit the weekend parking occupancy to be no more than the 85% industry guidance threshold, it is recommended that the 321 car parks available would need to be increased. A conservative estimate based on the full parking demand assessment would require (416 / 85% =) to approximately (359 / 85% =) 489 spaces, that is a net increase of 168 parking spaces to cater for demands. Should much of the additional GFA be considered ancillary a lower level of (359 /85% =) 423 spaces would be required, that is a net increase of 102 spaces.

[9] Online repository of New Zealand and Australian trip and parking rates available to subscribing members
[10] Published by New South Wales government, TS 00085 | Version 1.1.

Noting that the proposed development is anticipated to be taken up with indoor courts and that this extension is a standalone from the current building, the estimated increases in parking uptake is most likely towards the top end of this range - it is therefore recommended that approx 160 new spaces be provided.

As a sanity check, if all four courts are occupied (8 teams playing) with teams having arrived for the following game (8 more teams on-site) this would equate to 8.5 vehicles per team with carpark operating at 85% occupancy. This is considered a reasonable level of provision especially when noting that there would be additional parking demand associated with the health and wellness centre.

The resultant percentage parking occupancy by time of day for average weekdays and Saturdays across the full site (assuming 160 new car parks are provided) are shown in Figure 4.2 and Figure 4.3 below, including a comparison against the recommended 85% parking occupancy threshold.

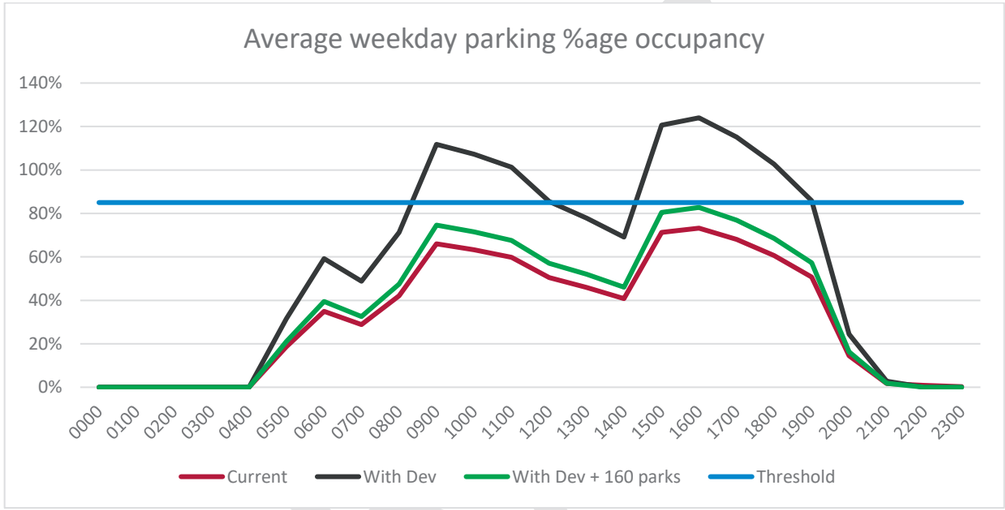


Figure 4.2 Average weekday %age parking occupancy by hour

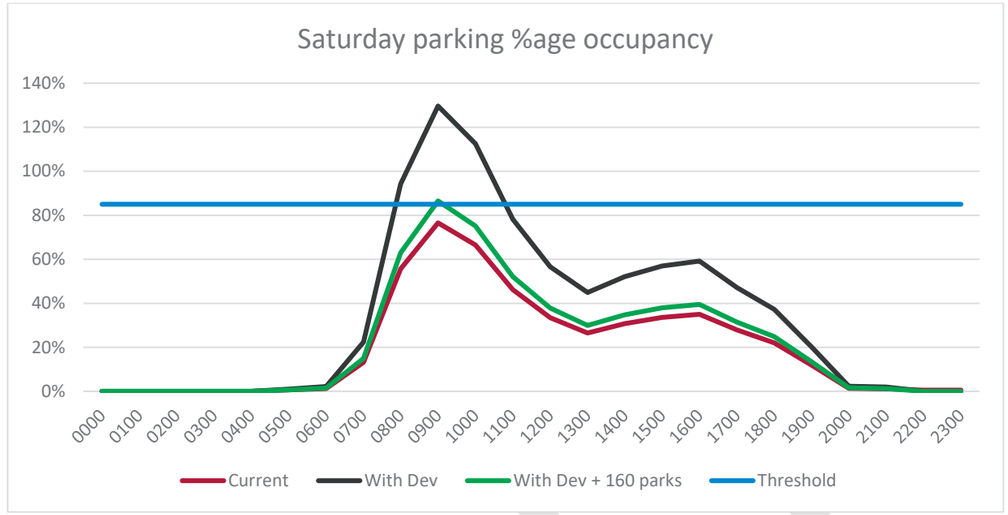


Figure 4.3 Saturday %age parking occupancy by hour

4.4 Parking demand for one-off events

There are several potential event scenarios identified in the brief, specifically an indoor event with 2000+ attendees, a banquet of 500 persons and a stand-up concert of 2000+ persons. It is not recommended to design and construct permanent parking capacity for these larger events.

Instead an Event Traffic Management Plan (ETMP) is recommended to manage access and parking for all modes. This may include providing temporary parking on vacant land in the vicinity including the sports fields.

Jasmax have requested that Ableyprovide high-level advice on likely parking demand for two of these events as assessed below.

Event One - 500 person banquet

An event such as a banquet is likely to have a relatively high vehicle occupancy as many attendees will arrive in groups including carpooling with a designated driver. For similar assessments Ableyare aware of vehicle occupancies in the order of 3 persons per vehicle being assumed. This would put the maximum number of anticipated vehicles arriving at the event (if everyone drove) at 167 vehicles. Additional parking would also need to be considered for staff working at the event.

In all likelihood there would be some use of public transport, rideshare (ie taxi or Uber) and potentially a limited amount of walking and cycling to the QEC for a sporting event. Ableyis not aware of any local data that is available to estimate the proportion of uptake of these modes, but recommends that local surveys for similar events be undertaken where it is possible to do so.

Noting the very close proximity of the bus hub on Frankton Road, widespread availability of taxis and rideshare, and relatively central location of QEC it is plausible that a substantial number of attendees may choose modes alternative to the private car. The attractiveness of other modes would also depend on how difficult or restricted parking availability may be. If many of the attendees for a banquet are visitors to Queenstown (as would be the case for a conference dinner) it is plausible they will rely on rideshare services as opposed to renting vehicles. However, events attracting a large number of locals will have a much higher private vehicle mode share.

It is estimated that the proportion of attendees that drive could be anywhere between 40% and 80% although even this broad range is difficult to pin down without local data. Within this range the parking demand would be 67 to 134 vehicles. Importantly, the likely number of vehicles is substantially less than the parking availability. Assuming banquets are timed to not coincide with peak carpark usage (eg they occur in the evening) then there is likely to be sufficient availability on-site without relying on temporary parking. Should a banquet occur with peak demand (eg they occur during the middle of the day especially on weekends) then the additional 160 parking spaces proposed to be allocated for the new building is anticipated to cater for visitors and most likely staff (although specific staff numbers are not known at this stage).

Event Two – Indoor event with 2,000 attendees

Although it is understood that the maximum sized event is likely to have 1,500 attendees it is plausible that 2,000 attendee events may be run with suitable management plans in place. Typically, a sporting event and other events which attract families or groups attending together is considered to have relatively high vehicle occupancy, with 3 persons per vehicle being a standard assumption. This would put the maximum number of anticipated vehicles arriving at the 2,000 person event (if everyone drove) at 667 vehicles.

In all likelihood there would be some use of public transport, rideshare (ie taxi or Uber) and potentially a limited amount of walking and cycling to the QEC for a sporting event. Ableyis not aware of any local data that is available to estimate the proportion of uptake of these modes, but recommends that local surveys for similar events be undertaken where it is possible to do so.

Noting the very close proximity of the bus hub on Frankton Road and well-connected cycling infrastructure which is improving as part of the SH6 / 6A improvements, it is plausible that up to 20% of attendees may choose alternative modes to the private car. If this were to eventuate, parking demand would reduce to approximately 534 vehicles. Ableyare aware of other assessments from larger cities (Auckland, Christchurch) which rely on a higher level of alternative mode share (30%+) but consider these may be high in the Queenstown context. If between 20% and 30% of attendees do not use private vehicle then the number of cars seeking parking will be between 467-534 for a 2,000 person event.

These figures exceed the current quantum of 321 on-site parks but are in the approximate range of the proposed increase (of 160) to 481 car parking spaces. Assuming indoor events are timed to not coincide with times at which the car park will be busy (eg they occur in the evening) then there is the potential for a small amount of overflow off-site requiring temporary parking to be considered under the 2,000 person scenario. For large events other travel arrangements such as putting on free buses, off-site park and ride services or park and walk from nearby locations should be considered.

It is recommended that for 2000 person events temporary parking be made available of up to 100 vehicles for events that occur when the QEC is quiet and in the order of 300-400 vehicles where events may coincide with full operations at the QEC. This requirement would increase in line with the above advice for events with greater attendance. This would be managed under an ETMP and include monitoring of the level of parking uptake so that planning for future events can be informed by those previous events. This will provide better visibility of likely future parking requirements. Staff parking also needs to be provided – at this stage Ableyare uncertain how many staff would be associated with a 2000+ person indoor event and recommend further information be sought from Council in this regard.

5. Conclusions

This technical note revisits the parking and access assessment work undertaken by WSP in 2019 as part of the QEC Master Plan. The assessment has been re-based on February 2026 parking provision, parking demand and trip generation associated with the QEC site and estimates future parking demand

and traffic generation for a proposed 6,000 sqm GFA extension to include four indoor courts and a fitness and wellness centre. The key conclusions from this assessment are:

- A February 2026 survey indicates that approximately 160 additional carparks may be required to cater for additional parking demand to provide for the new standalone building.
- Additional temporary parking capacity may be required to accommodate one-off events, especially if these coincide with typical peaks in QEC activity. It is recommended that:
  - temporary parking could be provided using grassed areas not under use.
  - The proposed addition of 160 car parks should be sufficient parking for a 500-person banquet in the new building.
  - a 2,000-person indoor event may require up to an additional 100 temporary car parks if scheduled during periods with low levels of activity at the QEC, or as many as 300-400 temporary car parks should these coincide with peak parking activity.
  - the above parking estimates do not extend to consider staff parking requirements which would be additional to the figures. It is recommended that engagement be undertaken with Council to understand likely staff numbers such that these can be added to the assessment.

DRAFT

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Appendix A.
Review of current parking provision

A1. Analysis of current parking provision

A1.1 Cricket nets carpark (accessible via Joe O'Connell Drive)



2173 sqm = 74 spaces (29.4 sqm /space)

A1.2 Main carpark (accessible via Joe O'Connell Drive)



930 sqm = 29 parks (32.1 sqm/space)

A1.3 Main carpark (west of main building)



6556 sqm = 218 car parks (30 sqm per park)

Total is 7486 sqm including loading zone

Auckland
Level 1/70 Shortland Street
Auckland 1010
Aotearoa New Zealand

Wellington
Level 1/119-123 Featherston Street
Wellington 6011
Aotearoa New Zealand

Christchurch
Level 1/137 Victoria Street
PO Box 36446, Merivale
Christchurch 8146
Aotearoa New Zealand

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7.4.6 Planning

11 August 2026

Jasmax South Limited
C/-VIA EMAIL

Attention: Chris Jack

Dear Chris

PROPOSED INDOOR SPORTS FACILITY – QUEENSTOWN EVENTS CENTRE

Introduction

Southern Planning Group has been engaged to provide resource management assistance in terms of the development of the proposed indoor sports facility (proposed facility) at the Queenstown Events Centre (QEC).

The proposed facility does not meet all the conditions within Designation 29 from within the Proposed District Plan (PDP). As such, this report will canvas the approach to authorising the proposed facility from a planning perspective.

The recommended approach to authorise the proposed facility is to alter Designation 29 as opposed to using a standard resource consent path.

This report will provide a summary of the following considerations:

1. Existing Designation 29
2. Reccommended alteration to Designation 29
3. Information requirements and peer reviews for the alteration to Designation 29.
4. Key risks with altering Designation 29

Overall, we consider there is a strong argument to gain approval to alter Designation 29 in order to allow for the development and operation of the proposed facility.

We note that the subject land is classified as a Recreation Reserve and subject to the Reserves Act 1977.

Proposed District Plan: Designation 29 (QLDC Events Centre & Aquatic Centre)

In terms of the PDP, the QEC is contained within Designation 29. Designation 29 was originally authorised by the Council (as the requiring authority) in 1996 and the designation considerably revamped during the staged PDP Review.

The purpose of Designation 29 is as follows:

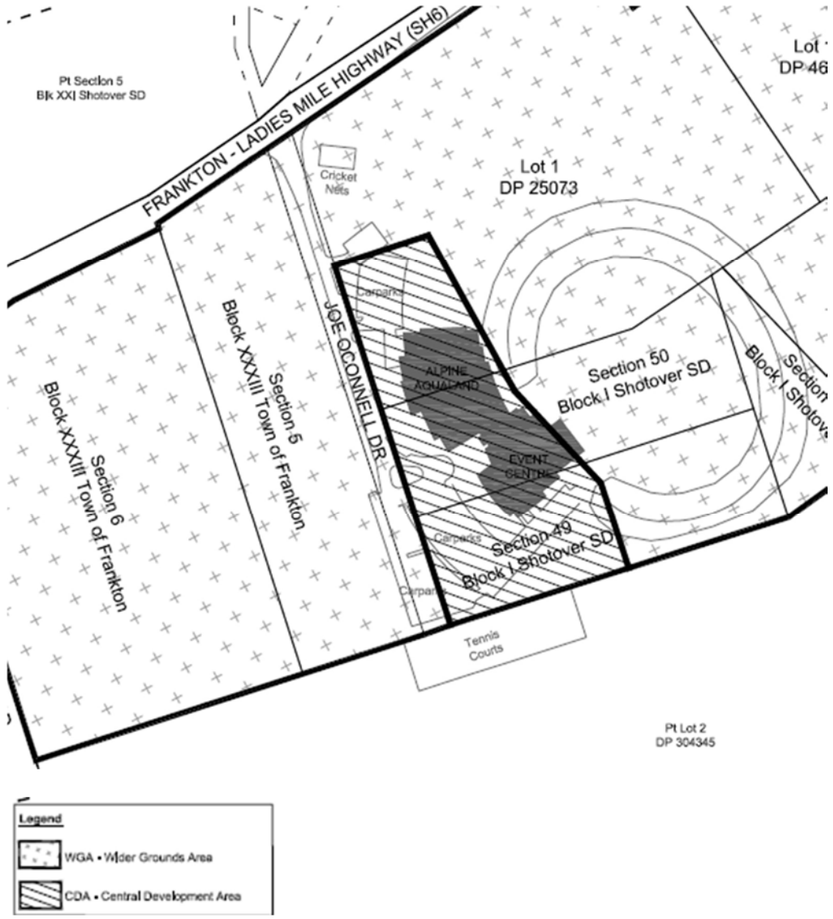
> *To enable the continued operation and expansion of a multi-purpose indoor and outdoor* recreation, *cultural and conference complex referred to as the Queenstown Events Centre.*

The 'general activities' (indoor and outdoor) that are enabled within Designation 29 include:

- *provision of sporting/recreational activities and events;*
- *provision of commercial recreational activities;*
- *provision of cultural/commercial activities such as concerts, shows, musicals, carnivals, fairs, market days, meetings, exhibitions, parades, rallies and filming;*
- *provision of conferences (including gala dinners);*
- *informal and designated parking associated with the operation of the QEC.*

From a land use perspective (i.e. the activity itself), the proposed facility meets the purpose of Designation 29 and also fits within the list of enabled 'general activities'.

Designation 29 uses a Structure Plan in terms of controlling the size and location of buildings, with the Structure Plan indicating two areas, being the Central Development Area (CDA) and the Wider Grounds Area (WGA). The CDA and WGA are demarcated below from the Structure Plan:



Buildings within the CDA can be developed to a maximum height of 18m, while the maximum building height within the WGA is 8m.

The proposed facility has an approximate height of 12.7m and is located within the WGA, thereby exceeding the permitted building height by 4.7m. All other Designation 29 building controls are adhered to.

Based on the breach of the 8m height limit within the WGA, Designation 29 will need to be altered to cater for the proposed facility.

Alteration to Designation 29 – Proposed Amendment

The Council as the requiring authority for Designation 29 can seek to alter the designation via Section 181 of the Resource Management Act 1991 (RMA) in order to enable the proposed facility at the QEC.

An efficient approach to cater for the proposed facility is to expand the existing CDA within Designation 29 so as to incorporate the required building height for the building.

While there is the option for a resource consent to be applied for in terms of the proposed facility under the PDP via the underlying zone (Community Purposes Zone - CPZ), the recommended approach is to alter Designation via Section 181 of the RMA. This view is formed on the following basis:

1. Designation 29 is specific to the QEC, while the CPZ is a generic District wide zone.

2. The designation pathway more easily enables activities that have large degrees of non-compliance when compared to a standard resource consent process.

3. Designation 29 can be altered in a manner so that any future approvals are done via Outline Plan approvals, as opposed to new resource consents (or variations to such). Outline Plans are faster and more cost efficient when compared to resource consent applications.

4. From long term planning and administrative perspectives, it is more efficient that an expanded QEC is managed by one altered designation, as opposed to the existing designation and a standalone resource consent.

Via Section 182(3) of the RMA, the Council in its territorial authority may at any time alter a designation in its district plan or a requirement in its proposed district plan if:

(a) the alteration—

(i) involves no more than a minor change to the effects on the environment associated with the use or proposed use of land or any water concerned; or

(ii) involves only minor changes or adjustments to the boundaries of the designation or requirement; and

(b) written notice of the proposed alteration has been given to every owner or occupier of the land directly affected and those owners or occupiers agree with the alteration; and

(c) both the territorial authority and the requiring authority agree with the alteration

An alteration to a designation is treated similar to a resource consent in terms of notification under the RMA. If the requirements of Section 182(3) of the RMA are met, then the alteration to Designation 29 can be processed on a non-notified basis. Alternatively, if the requirements of Section 182(3) of the RMA are not met and the effects are considered to be more than minor, some form of notification will be required to alter Designation 29.

The positive attributes that will assist gaining permission to alter Designation 29 for the proposed facility include the following:

1. The facility will provide much needed recreational indoor space for community use.

2. The facility fulfils the purpose of Designation of 29.

3. The facility is appropriately co-located with the existing central hub at the QEC (buildings, parking and amenities).

4. The facility is located substantial distances from privately owned land (excluding land owned by the Queenstown Airport Corporation- QAC).

The information requirements for the application to alter Designation 29 and key risks are outlined below.

Alteration to Designation 29 – Information Requirements & Peers Reviews

Pre-application dialogue has occurred with a Council appointed independent planning consultant in terms of the proposed facility. From a high level, the planning consultant agrees that altering Designation 29 is the efficient approach in enable the proposed facility.

Discussions with the planning consultant has outlined the necessary information for the alteration to the designation application:

1. Architectural Package

2. Landscape Package

3. Urban Design Assessment

4. Transportation Assessment

5. Geotechnical & Hazards Assessment

6. Infrastructure Servicing Assessment

7. Earthworks Plan

8. Environmental Management Plan

9. Detailed Site Investigation (HAIL)

10. Planning Assessment

Once the application is formally lodged, the planning consultant has advised that peer reviews will potentially be required in terms of urban design, transportation and the EMP.

Alteration to Designation 29 – Key Risks

As outlined above, the proposed facility has a number of positive attributes and fits the purpose of Designation 29.

The two key risks relate to effects on the State Highway network and on Queenstown Airport.

Early consultation with NZTA with the goal of obtaining an affected persons approval from this organisation will significantly decrease the risks associated with transportation associated with the proposed facility.

With the Queenstown Airport Corporation (QAC), either an affected persons approval could be sought and obtained, or sufficient information provided within the application for the Council (as territorial authority) to make a determination that the QAC are not adversely affected. This latter approach is on the basis that there are already conditions contained within Designation 29 that protect QAC's interests (such as Condition 8 (acoustic insulation) and Condition 14 (take-off climb and approach or transitional protection surfaces)). If there is some confidence that an affected persons approval can be obtained from the QAC, we would recommend this course of action.

We consider other aspects of the application do not present the same level of risk per transportation and effects upon Queenstown Airport.

Should you have any questions in relation to this report, please give me a call.

Yours Sincerely

Scott Freeman
DIRECTOR
SOUTHERN PLANNING GROUP

7.5 RMA Sports Indicative Schedule & Pricing

QUANTITY SURVEYING ESTIMATE

RMA Sport and Leisure

AU ABN: 84 091 238 532
NZ IRD: 88 410 734

Date: 18/05/2026

Project: Queenstown Lakes District Council - NZ

Contact:
Hamish Oteiwi
P: +61289140831
E: hamish@rmasport.com.au

Room Data Sheet

Product code	Description	Qty	Unit	Price
	:tball			
SAM325	SAM325 - Basketball - Portable - 325 FIBA level 1 Schelde SAM 325 FIBA level 1 system with padding, ring, glass backboard and DSF- Supply only. Exclude freight from overseas. Includes anchors for standard floor. Excludes floor access cover plate. We can provide this, or it can be provided to match the floor	2	ea	24,327.00
SC-F1	SC-F1 - Shot Clocks FIBA 1 certified shot clocks with 250 mm shot and 150 mm time digits. 2 x double sided displays per backstop. (Unit=Pair) - Supply only. Mounting stand additional and dependent on Backstop model	1	pair	14,229.00
SC-BBL	SC-BBL - Backboard light array LED backboard light array (pair) - red and yellow - Supply only	1	pair	2,424.00
SCBKT-SAM	SCBKT-SAM shot clock bracket Shot Clock bracket set to suit SAM 325 basketball backstop and SC-F1 shot clocks. 4 brackets per set to suit 1 court with double sided, twin location shot clocks per backstop. When ordered at the same time as backstop	1	set	1,740.00
Stadia roof-mounted retractable basketball - supply and install items				
BBSTR-B	BBSTR-B - Stadia Roof Mount- 7.6-9.74 m FIBA Certified straight mast roof mounted indoor Basketball system (each) for attachment height 7.6-9.74 m. Includes electric winch, armour glass backboard, Posilock goal and backboard padding. Electric key switch operation. Suitable for Level 2 international competition. SYSTEM PRICED BASED ON UB'S DESIGNED AND INSTALLED BY OTHERS PERPENDICULAR TO BACKBOARD. SAFETY STRAPS ARE RECOMMENDED FOR ALL INSTALLS. Excludes installation.	8	ea	13,452.00
BBSS	BBSS - Basketball Safety Strap Safety strap for Basketball systems. 10.7 m deployment length - excludes fittings (BBSS-FTG)	8	ea	1,125.00
BBST-AAGR	BBST-AAGR Height Adjust B/board upgrade (ea). Option for manual Height Adjustable Backboard upgrade for roof mount system (each). Excludes installation	8	ea	1,114.00
BBAAG-EW	BBAAG-EW - Basketball AAG Motor Kit for electrically operated height adjustable backboards. Supply Only. Installation additional. KS-OL Key switch or TSC controller additional. Electrical cabeling and connections to be completed by qualified electrician. Requires dedicated power circuit	8	ea	1,350.00
Stadia roof-mounted retractable curtain - supply and install items				
CURT-ST	CURT-ST - Curtains Stadia Centre Roll Dividing Curtain (each) including motor and switchgear. Price based on attachment to an appropriate dedicated steel beam by others. Logos available on request and are quoted on submission of artwork - Supply only. Size:	3	item	28,000.00
Electrical controllers				
TSC-WIFI	TSC-WIFI - Controller TSC1500XL with touch screen fitted to Master Relay Cabinet and 12 relays, including dedicated remote Wi-Fi router. Downloadable app can be purchased on app stores for devices as required (not supplied) Supply Only. Installation including materials, cable runs, connections and commissioning to be by your qualified electrician.	1	ea	8,515.00
TSC1500XL-RB12	TSC1500XL-RB12 - Systems Controller TSC Upgrade - extension cabinet with 12 relays for 12 additional devices. Supply Only. Installation including materials, cable runs, connections and commissioning to be by your qualified electrician.	1	ea	3,963.00
Scoring systems				
SB-F3A	SB-F3A - Scoreboards FIBA Certified Scoreboard (each) with 200mm clock and scores from 0-199, 150mm team fouls, period and multipurpose display. 120mm programmable team names and Scorepad touch screen controller with long life battery- Supply only	4	ea	7,910.00
SB-F6	SB-F6 - Scoreboard foul wings Scoreboard SB-F3(A) foul extension module. 2 wings to attach to SB-F3A-250 model - Supply only	4	pair	5,605.00
SC-F2	SC-F2 - Shot Clocks FIBA Certified Shot Clocks (pair) with 250mm shot and 150mm game time digits. - Supply only Requires dedicated power circuit	4	pair	4,774.00
Aluline sleeved netball				
NBAL	NBAL - Netball Post Aluline Competition Netball Post (each). Powder coated finish and steel ring. Sleeves and caps additional - Supply only	4	ea	397.00
PPNB	PPNB - Netball Post Pad Netball Post Pad (each) for NBAL post (72mm diameter).	4	ea	193.00

Product code	Description	Qty	Unit	Price
	Cylindrical pad with RED vinyl cover. 2.9m high. Custom colours available at additional charge - Supply only			
NBALH	NBALH - Netball Post - Adjustable Aluline Height - Adjustable Netball Post (each) with safety sliding design allowing for Netta height. Powder coated finish and extra heavy ring with milled net holders. Sleeves and caps additional - Supply only	4	ea	519.00
PPNBALH	PPNBALH - NBALH post pad Netball Post Pad (each) to suit Aluline Height-Adjustable system. 2m in height. Post diameter of 80mm. Colour is RED - Supply only NOTE IF PAD ALSO REQUIRED FOR POST AT SENIOR HEIGHT, A SECOND TALLER PAD IS ALSO REQUIRED.	4	ea	316.00
Stadia sleeved volleyball				
VBTCS	VBTCS Multisport Post TCS aluminium Multisport post including slider height adjustment for any sport between 2440 - 1200 mm. Linear worm winder with net tension indicator - per pair. Supply Only	4	pair	3,188.00
VBNC	VBNC - Volleyball Net - Competition Competition Volleyball Net (each) with kevlar cable, top and bottom velcro tension straps, edged on all sides. Braided knotless 4 mm PP black mesh netting, 100 mm squares. Suits post spacing 10.0 - 11.0m. (Does not suit Senoh posts) Braided knotless 4 mm PP black mesh netting, 100 mm squares.	4	ea	247.00
VBANT	VBANT - Volleyball Antennae Volleyball Net Antennae (pair) with pocket.	4	pair	134.00
PPVB	PPVB - Volleyball Padding set Pads (pair) to suit aluminium multisport posts. Double flap. 1800 x 760 × 40mm with velcro straps. Colour is RED - Supply only	4	pair	530.00
VBRS	VBRS - Volleyball Referee Stand Essentials Volleyball Referee Stand (each) - supplied in kit form. Excludes assembly.	4	ea	889.00
VBRS-P	VBRS-P Volleyball Referee's Stand Pad Essentials Volleyball Referee's Stand Padding (each) - RED - Supply only	4	ea	664.00
Sleeves & access cover plates				
SLV-NBALT	SLV-NBALT sleeve for Netball/Badminton Aluline straight sleeve (each) for Netball/Badminton. Flanged top. Suits timber or synthetic grass surfaces - Supply only	8	ea	110.00
SLV-VBTCS	SLV-VBTCS sleeve Aluminium sleeves for VBTCS Multisport Post - Each. Supply Only	8	ea	173.00
ACP-150	ACP-150 - Access Cover Plate for indoor floors Access Cover Plate (each) for indoor floors. Aluminium with lid and installation ring. Removal cover 138mm opening - Supply only	16	ea	200.00
Free-standing weighted-portable badminton/pickleball				

RMASPORT™

Product code	Description	Qty	Unit	Price
BMPINF	BMPINF - Freestanding Badminton/Pickleball Posts Freestanding Post System (pair) for elite Badminton and Pickleball - 70 kg weight per end. No court interference - Supply only. Indoor Use	16	pair	1,224.00
BMNET	BMNET - Badminton Competition Net Competition Badminton Net (each).	16	ea	78.00
PBNET	PBNET - Pickleball Net Pickleball net. 6630 × 760 mm. 3 mm braided black netting - Supply only	16	ea	166.00
Aluline futsal/handball/indoor-hockey goals				
ALMG	ALMG - Aluline Multisport Goals Aluline Multisport Goals (pair) - full frame with folding sides and competition nets. Suits Futsal, Indoor Hockey, Handball etc - Supply only	4	pair	3,106.00
SLV-ALMG	SLV-ALMG Hold down for ALMG goal Hold down for ALMG goal. Includes floor plate and bolt with a round milled aluminium handle (not plastic or a metal bar). Recommended 4 per goal - Supply only	32	ea	38.00
Trolleys & storage				
GPT	GPT - Storage Trolley Essentials Games Post Trolley (each) with wheels. Kit set. Excludes assembly.	2	ea	937.00
ALMG-T	ALMG-T - Storage Trolley ALMG Goal Trolley (each) - suits 4 goals. Kit set. Excludes assembly.	2	ea	964.00
BSC	BSC Mobile Ball Storage Ball storage cart - Foldable mobile cage on wheels with mesh container for up to 18 balls	3	ea	343.00
Seating/benches				
SBST18	SBST18 - Scorebench Stadia Score Bench (each) with RED padding. Other colours quoted separately. 1800mm wide - Supply only	4	ea	1,887.00
SEAT-E4	SEAT-E4 Essentials Bench - 4 m Essentials aluminium bench seat - stackable, 4 m with non-marking feet.	8	ea	562.00
			Subtotal:	**460,784.00**
			GST (10%):	46,078.40
			Total (AUD):	**506,862.40**

ROOM DATA SHEET

RMASPORT

Jasmax

RMA Sport and Leisure
4/12 Tollis Place, 2147 Seven Hills, NSW, Australia

Queenstown Lakes District Council - NZ

Date: 18/05/2026

Project: Queenstown Lakes District Council - NZ

Contact:
Hamish Oteiwi
P: +61289140831
E: hamish@rmasport.com.au

Product code	Description	Qty	Unit	Product image
Portable basketball				
SAM325	SAM325 - Basketball - Portable - 325 FIBA level 1 Schelde SAM 325 FIBA level 1 system with padding, ring, glass backboard and DSF- Supply only. Exclude freight from overseas. Includes anchors for standard floor. Excludes floor access cover plate. We can provide this, or it can be provided to match the floor	2	ea	
SC-F1	SC-F1 - Shot Clocks FIBA 1 certified shot clocks with 250 mm shot and 150 mm time digits. 2 x double sided displays per backstop. (Unit=Pair) - Supply only. Mounting stand additional and dependent on Backstop model	1	pair	

RMASPORT

Product code	Description	Qty	Unit	Product image
SC-BBL	SC-BBL - Backboard light array LED backboard light array (pair) - red and yellow - Supply only	1	pair	
SCBKT-SAM	SCBKT-SAM shot clock bracket Shot Clock bracket set to suit SAM 325 basketball backstop and SC-F1 shot clocks. 4 brackets per set to suit 1 court with double sided, twin location shot clocks per backstop. When ordered at the same time as backstop	1	set	
Stadia roof-mounted retractable basketball - supply and install items				
BBSTR-B	BBSTR-B - Stadia Roof Mount- 7.6-9.74 m FIBA Certified straight mast roof mounted indoor Basketball system (each) for attachment height 7.6-9.74 m. Includes electric winch, armour glass backboard, Posilock goal and backboard padding. Electric key switch operation. Suitable for Level 2 international competition. SYSTEM PRICED BASED ON UB'S DESIGNED AND INSTALLED BY OTHERS PERPENDICULAR TO BACKBOARD. SAFETY STRAPS ARE RECOMMENDED FOR ALL INSTALLS. Excludes installation.	8	ea	

Product code	Description	Qty	Unit	Product image
BBSS	BBSS - Basketball Safety Strap Safety strap for Basketball systems. 10.7 m deployment length - excludes fittings (BBSS-FTG)	8	ea	
BBST-AAGR	BBST-AAGR Height Adjust B/board upgrade (ea). Option for manual Height Adjustable Backboard upgrade for roof mount system (each). Excludes installation	8	ea	
BBAAG-EW	BBAAG-EW - Basketball AAG Motor Kit for electrically operated height adjustable backboards. Supply Only. Installation additional. KS-OL Key switch or TSC controller additional. Electrical cabeling and connections to be completed by qualified electrician. Requires dedicated power circuit	8	ea	
Stadia roof-mounted retractable curtain - supply and install items				
CURT-ST	CURT-ST - Curtains Stadia Centre Roll Dividing Curtain (each) including motor and switchgear. Price based on attachment to an appropriate dedicated steel beam by others. Logos available on request and are quoted on submission of artwork - Supply only. Size:	3	item	
Electrical controllers				

Product code	Description	Qty	Unit	Product image
TSC-WIFI	TSC-WIFI - Controller TSC1500XL with touch screen fitted to Master Relay Cabinet and 12 relays, including dedicated remote Wi-Fi router. Downloadable app can be purchased on app stores for devices as required (not supplied) Supply Only. Installation including materials, cable runs, connections and commissioning to be by your qualified electrician.	1	ea	
TSC1500XL-RB12	TSC1500XL-RB12 - Systems Controller TSC Upgrade - extension cabinet with 12 relays for 12 additional devices. Supply Only. Installation including materials, cable runs, connections and commissioning to be by your qualified electrician.	1	ea	
Scoring systems				
SB-F3A	SB-F3A - Scoreboards FIBA Certified Scoreboard (each) with 200mm clock and scores from 0-199, 150mm team fouls, period and multipurpose display. 120mm programmable team names and Scorepad touch screen controller with long life battery- Supply only	4	ea	
SB-F6	SB-F6 - Scoreboard foul wings Scoreboard SB-F3(A) foul extension module. 2 wings to attach to SB-F3A-250 model - Supply only	4	pair	

Product code	Description	Qty	Unit	Product image
SC-F2	SC-F2 - Shot Clocks FIBA Certified Shot Clocks (pair) with 250mm shot and 150mm game time digits. - Supply only Requires dedicated power circuit	4	pair	
Aluline sleeved netball				
NBAL	NBAL - Netball Post Aluline Competition Netball Post (each). Powder coated finish and steel ring. Sleeves and caps additional - Supply only	4	ea	
PPNB	PPNB - Netball Post Pad Netball Post Pad (each) for NBAL post (72mm diameter). Cylindrical pad with RED vinyl cover. 2.9m high. Custom colours available at additional charge - Supply only	4	ea	

Product code	Description	Qty	Unit	Product image
NBALH	NBALH - Netball Post - Adjustable Aluline Height - Adjustable Netball Post (each) with safety sliding design allowing for Netta height. Powder coated finish and extra heavy ring with milled net holders. Sleeves and caps additional - Supply only	4	ea	
PPNBALH	PPNBALH - NBALH post pad Netball Post Pad (each) to suit Aluline Height-Adjustable system. 2m in height. Post diameter of 80mm. Colour is RED - Supply only NOTE IF PAD ALSO REQUIRED FOR POST AT SENIOR HEIGHT, A SECOND TALLER PAD IS ALSO REQUIRED.	4	ea	
Stadia sleeved volleyball				
VBTCS	VBTCS Multisport Post TCS aluminium Multisport post including slider height adjustment for any sport between 2440 - 1200 mm. Linear worm winder with net tension indicator - per pair. Supply Only	4	pair	
VBNC	VBNC - Volleyball Net - Competition Competition Volleyball Net (each) with kevlar cable, top and bottom velcro tension straps, edged on all sides. Braided knotless 4 mm PP black mesh netting, 100 mm squares. Suits post spacing 10.0 - 11.0m. (Does not suit Senoh posts) Braided knotless 4 mm PP black mesh netting, 100 mm squares.	4	ea	

Product code	Description	Qty	Unit	Product image
VBANT	VBANT - Volleyball Antennae Volleyball Net Antennae (pair) with pocket.	4	pair	
PPVB	PPVB - Volleyball Padding set Pads (pair) to suit aluminium multisport posts. Double flap. 1800 x 760 × 40mm with velcro straps. Colour is RED - Supply only	4	pair	
VBRS	VBRS - Volleyball Referee Stand Essentials Volleyball Referee Stand (each) - supplied in kit form. Excludes assembly.	4	ea	

Product code	Description	Qty	Unit	Product image
VBRS-P	VBRS-P Volleyball Referee's Stand Pad Essentials Volleyball Referee's Stand Padding (each) - RED - Supply only	4	ea	
Sleeves & access cover plates				
SLV-NBALT	SLV-NBALT sleeve for Netball/Badminton Aluline straight sleeve (each) for Netball/Badminton. Flanged top. Suits timber or synthetic grass surfaces - Supply only	8	ea	
SLV-VBTCS	SLV-VBTCS sleeve Aluminium sleeves for VBTCS Multisport Post - Each. Supply Only	8	ea	
ACP-150	ACP-150 - Access Cover Plate for indoor floors Access Cover Plate (each) for indoor floors. Aluminium with lid and installation ring. Removal cover 138mm opening - Supply only	16	ea	
Free-standing weighted-portable badminton/pickleball				

Product code	Description	Qty	Unit	Product image
BMPINF	BMPINF - Freestanding Badminton/Pickleball Posts Freestanding Post System (pair) for elite Badminton and Pickleball - 70 kg weight per end. No court interference - Supply only. Indoor Use	16	pair	
BMNET	BMNET - Badminton Competition Net Competition Badminton Net (each).	16	ea	
PBNET	PBNET - Pickleball Net Pickleball net. 6630 × 760 mm. 3 mm braided black netting - Supply only	16	ea	
Aluline futsal/handball/indoor-hockey goals				
ALMG	ALMG - Aluline Multisport Goals Aluline Multisport Goals (pair) - full frame with folding sides and competition nets. Suits Futsal, Indoor Hockey, Handball etc - Supply only	4	pair	
SLV-ALMG	SLV-ALMG Hold down for ALMG goal Hold down for ALMG goal. Includes floor plate and bolt with a round milled aluminium handle (not plastic or a metal bar). Recommended 4 per goal - Supply only	32	ea	
Trolleys & storage				
GPT	GPT - Storage Trolley Essentials Games Post Trolley (each) with wheels. Kit set. Excludes assembly.	2	ea	
ALMG-T	ALMG-T - Storage Trolley ALMG Goal Trolley (each) - suits 4 goals. Kit set. Excludes assembly.	2	ea	

Product code	Description	Qty	Unit	Product image
BSC	BSC Mobile Ball Storage Ball storage cart - Foldable mobile cage on wheels with mesh container for up to 18 balls	3	ea	
Seating/benches				
SBST18	SBST18 - Scorebench Stadia Score Bench (each) with RED padding. Other colours quoted separately. 1800mm wide - Supply only	4	ea	
SEAT-E4	SEAT-E4 Essentials Bench - 4 m Essentials aluminium bench seat - stackable, 4 m with non-marking feet.	8	ea	

7.6 Alloyfold Retractable Seating Pricing

alloyfold. commercial furniture

44 Mandeville Street, Christchurch, 8011 | P: 03 349 4065 | F: 03 349 4066 | sales@alloyfold.com | www.alloyfold.co.nz

QUOTE INFORMATION

Quote Number	00031438	Created Date	3/08/2026
Prepared By	Chris Colenso	Payment Terms	50% deposit + balance before delivery
Date required	30/09/2027		

ADDRESS INFORMATION

Bill To Name	Jasmax-Christchurch	Contact Name	Paul Lelieveld
Bill To	PO Box 8404 Riccarton Christchurch 8440 NEW ZEALAND	Ship To	47 Riccarton Road Riccarton Chirstchurch 8011 NEW ZEALAND
Phone	03 341 1853		

QUOTE ITEMS

Product Code	Product	Line Item Description	Quantity	Sales Price	Total Price
Retract	Retractable Seating	757 Seat FIXED Retractable with the Victory seat including the installation and delivery to site	1.00	$590,000.00	$590,000.00
Install	Installation/Removal costs	Install included in the cost above	1.00	$0.00	$0.00

TOTALS

Subtotal	$590,000.00
GST	$88,500.00
Total (NZD)	$678,500.00

PAYMENT DETAILS

Deposit Amount $339,250.00

Please make Deposit and subsequent payments to: PATHWAY ENGINEERING LTD, Kiwibank, Account No. **38-9022-0247726-00**

To pay by credit card, please call us on 03-349-4065.

Balance Amount $339,250.00

**** Please Make Sure To Reference the Quote Number Below When Issuing Your Payment ****

Payment Reference 00031438

alloyfold. commercial furniture

44 Mandeville Street, Christchurch, 8011 | P: 03 349 4065 | F: 03 349 4066 | sales@alloyfold.com | www.alloyfold.co.nz

QUOTE INFORMATION

Quote Number	00031439	Created Date	3/08/2026
Prepared By	Chris Colenso	Payment Terms	50% deposit + balance before delivery
Date required	30/09/2027		

ADDRESS INFORMATION

Bill To Name	Jasmax-Christchurch	Contact Name	Paul Lelieveld
Bill To	PO Box 8404 Riccarton Christchurch 8440 NEW ZEALAND	Ship To	47 Riccarton Road Riccarton Chirstchurch 8011 NEW ZEALAND
Phone	03 341 1853		

QUOTE ITEMS

Product Code	Product	Line Item Description	Quantity	Sales Price	Total Price
Retract	Retractable Seating	757 Seat TRAVELLING Retractable with the Victory seat including the installation and delivery to site	1.00	$620,000.00	$620,000.00
Install	Installation/Removal costs	Install included in the cost above	1.00	$0.00	$0.00

TOTALS

Subtotal	$620,000.00
GST	$93,000.00
Total (NZD)	$713,000.00

PAYMENT DETAILS

Deposit Amount $356,500.00

Please make Deposit and subsequent payments to: PATHWAY ENGINEERING LTD, Kiwibank, Account No. **38-9022-0247726-00**

To pay by credit card, please call us on 03-349-4065.

Balance Amount $356,500.00

**** Please Make Sure To Reference the Quote Number Below When Issuing Your Payment ****

Payment Reference 00031439

44 Mandeville Street, Christchurch, 8011 | P: 03 349 4065 | F: 03 349 4066 | sales@alloyfold.com | www.alloyfold.co.nz

QUOTE INFORMATION

Quote Number	00031440	Created Date	3/08/2026
Prepared By	Chris Colenso	Payment Terms	50% deposit + balance before delivery
Date required	30/09/2027		

ADDRESS INFORMATION

Bill To Name	Jasmax-Christchurch	Contact Name	Paul Lelieveld
Bill To	PO Box 8404 Riccarton Christchurch 8440 NEW ZEALAND	Ship To	47 Riccarton Road Riccarton Chirstchurch 8011 NEW ZEALAND
Phone	03 341 1853		

QUOTE ITEMS

Product Code	Product	Line Item Description	Quantity	Sales Price	Total Price
Retract	Retractable Seating	2 x 757 Seat Retractable 1 fixed unit and 1 travelling unit with the Victory seat including the installation and delivery to site	1.00	$1,130,000.00	$1,130,000.00
Install	Installation/Removal costs	Install included in the cost above	1.00	$0.00	$0.00

TOTALS

Subtotal	$1,130,000.00
GST	$169,500.00
Total (NZD)	$1,299,500.00

PAYMENT DETAILS

Deposit Amount $649,750.00

Please make Deposit and subsequent payments to: PATHWAY ENGINEERING LTD, Kiwibank, Account No. **38-9022-0247726-00**

To pay by credit card, please call us on 03-349-4065.

Balance Amount $649,750.00

**** Please Make Sure To Reference the Quote Number Below When Issuing Your Payment ****

Payment Reference 00031440

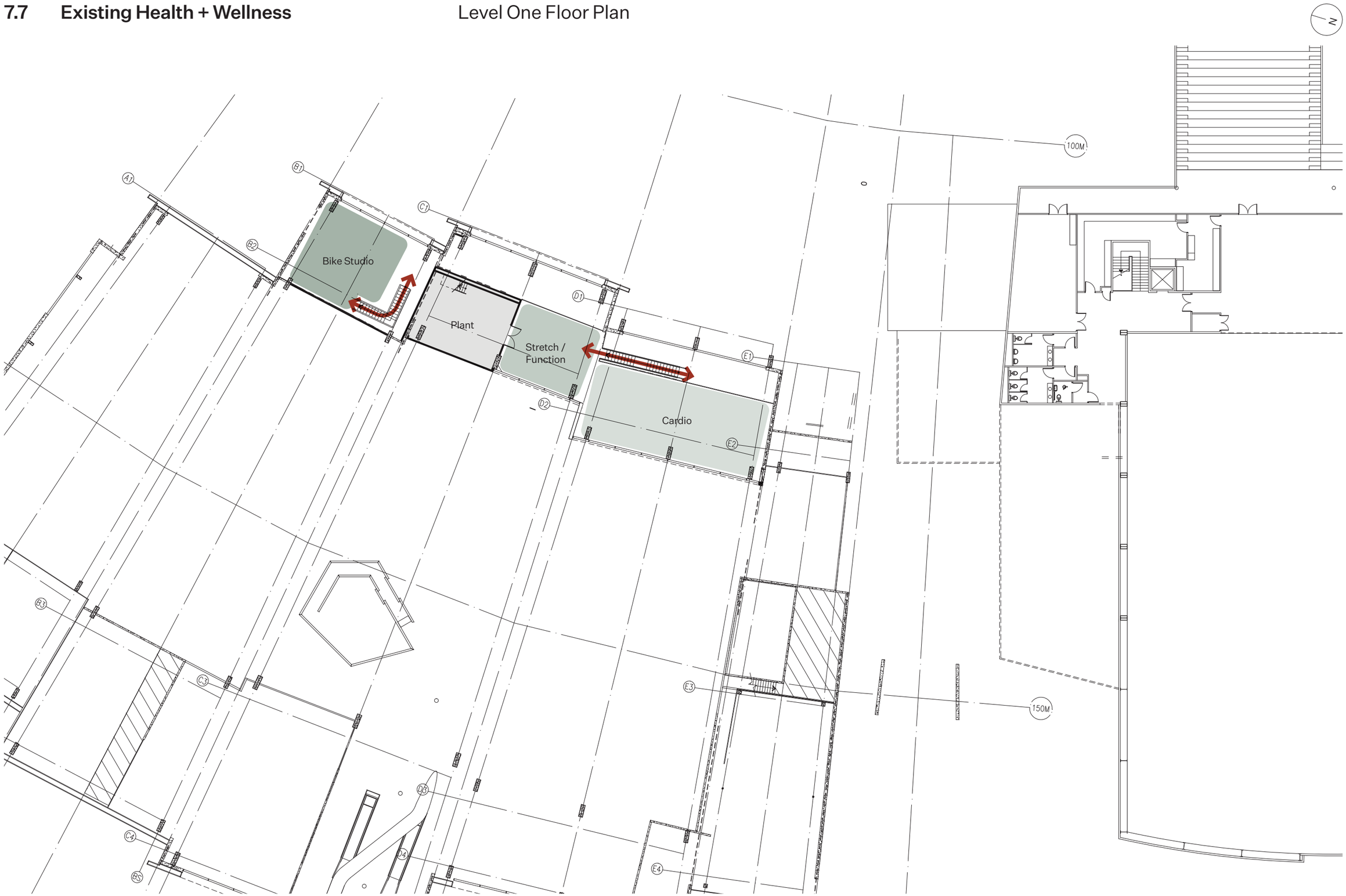
7.7 Existing Health+Wellness

Ground Floor Plan



7.7 Existing Health + Wellness

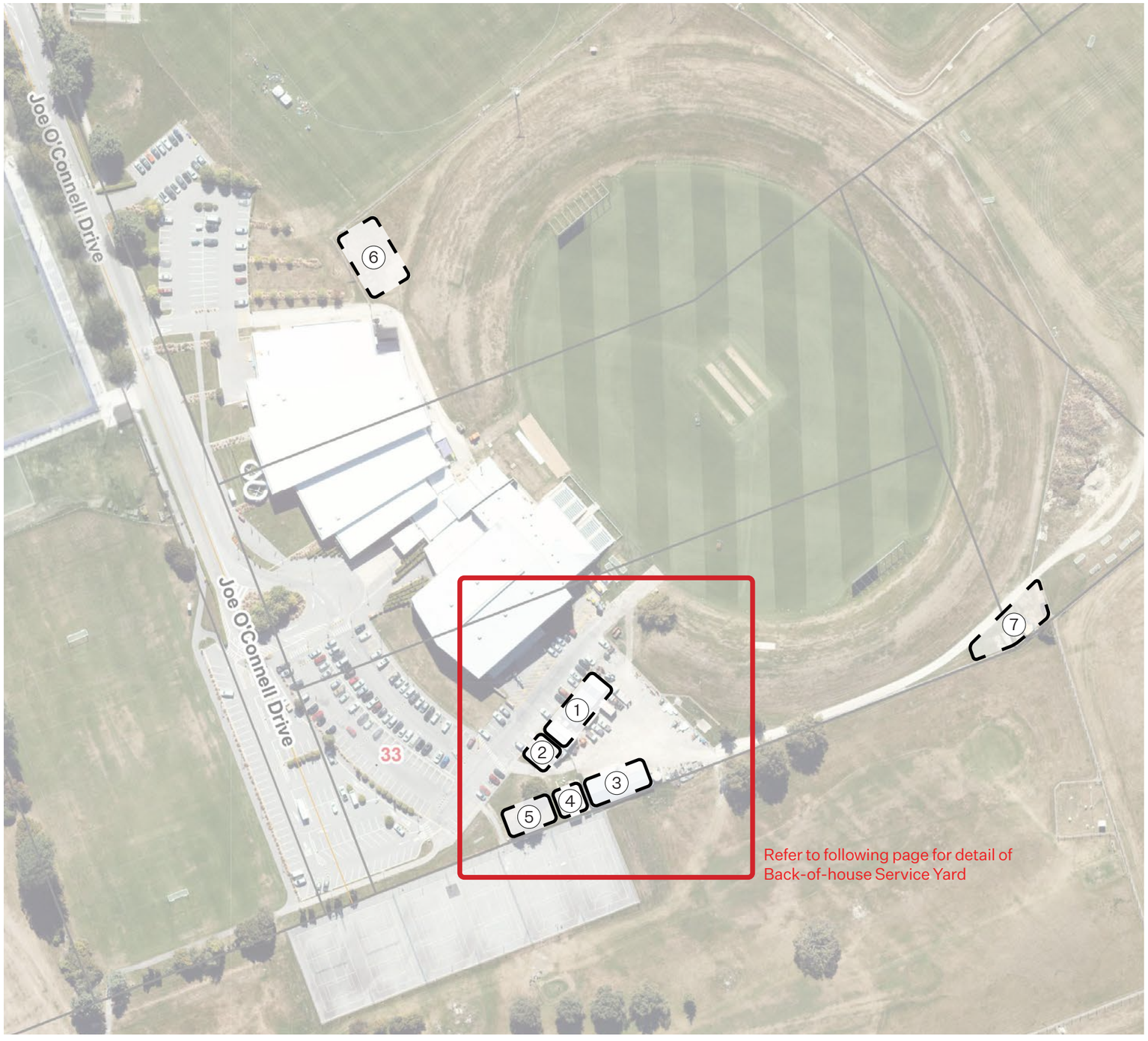
Level One Floor Plan



7.8 Existing Back of House

1. Purpose-built Shed Storage
2. Container Storage
3. Grounds Workshop & Storage
4. Portacom - Whakatipu Toy Library
5. Container Storage
6. QLDC Portacoms (stored)
7. Container Storage

Existing Storage on Site



7.8 Existing Back of House Study

1. Football / Cricket
2. Athletics
3. Rugby
4. QLDC Electric Bike Storage
5. QLDC Mixed Storage
6. Unknown
7. QLDC Venues
8. QLDC Venues
9. QLDC Venues
10. Civil Defence
11. Grounds Workshop & Storage
12. Rugby
13. Whakatipu Toy Library
14. Cross-T - Elite Ski
15. Netball
16. Pickle Ball

Grounds Service Yard
Grounds Workshop & Storage
Purpose-built Shed Storage
Portacom
Container
Trailer (Loose)

Existing Storage on Site



Thank you.

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