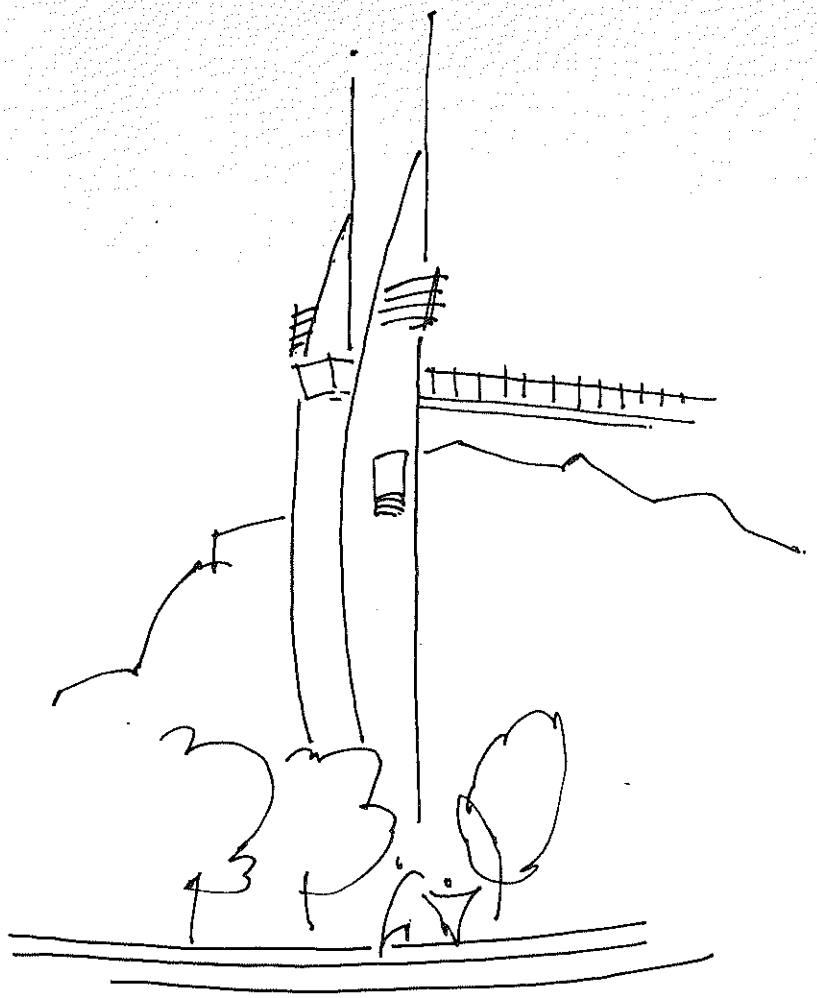
Proposed Redevelopment of Fort Regent



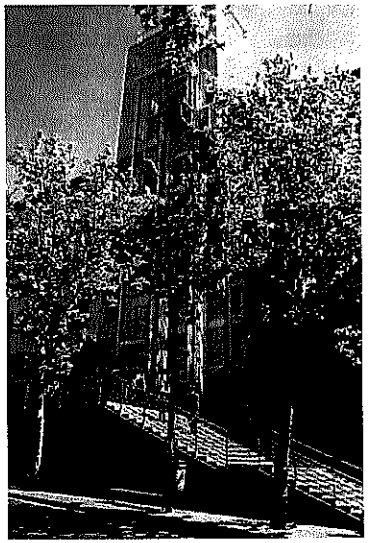
JERSEY

Sport Leisure and Recreation

saville jones | architects

March 2000

The ascent of the rock will be rapid, with views out across the town from the panoramic lifts. There will be a waiting time of less than one minute for ascent or descent. At the top of the cliff visitors will arrive at the glazed platform. This will have a bridge linking directly into the walkway, and the observation point, and on to the Visitors' Centre. These covered pedestrian walkways will also be fully glazed, in order to lessen the visual impact on the Fort, and afford views out. At various points there will be access into landscaped gardens and the external ramparts for visitors to explore the external areas, rather than enter the Fort.



Visitors' Centre

Visitors will first arrive from the lift walkway at a glazed rotunda located in a re-landscaped garden adjacent to the original northern mortar battery. A Reception here will allow visitors to pay for the sports activity of their choice. Alternatively, visitors will enjoy - free of charge - the new Visitors' Centre. This control, or reception, will be fully computerised, and linked electronically with the remodelled southern entry point from Fort Regent Road. This will enable bookings to be made at either point, and possibly at a point in town, such as Snow Hill. There will then be an area of the Fort, mainly on the inner ramparts, where the public could roam freely, with automatically controlled entry into the various sporting activities.

The Sport Leisure and Recreation Committee commissioned Saville Jones Architects and Roger Quinton Associates Ltd (RQA) in 1996, to prepare a Feasibility Study on the Future of Fort Regent. That Study was then taken further and 'Proposals for the Millennium' was prepared in the Spring of 1997. The intention behind these studies was to remove the conflicts that have existed at the Fort, in trying to be 'all things to all people', resulting in a mixture of entertainment, sport, arts and administration. Facilities on the island have improved significantly in recent years. Fort Regent Leisure Centre has, however, remained very much as it was in the early 1970's and requires upgrading to meet current demands and expectations.

If the Fort is to continue to be the premier sport and recreation facility on the island, and also to provide for an increasing market in sport tourism, then it needs to be modernised so that it can cater for the people of Jersey, plus its current and potential new visitors, providing a sporting facility which will rival most in the United Kingdom, and of which the island can be proud.

Access

The key to the future success of Fort Regent and its development as a tourist attraction, has been identified as the provision of an attractive, high speed, high quality means of access from the town. At present the pedestrian route is through the Pier Road car park, and via a lift and a series of escalators, or up Pier Road steps. The vehicular route, which would remain, is via South Hill and Fort Regent Road.

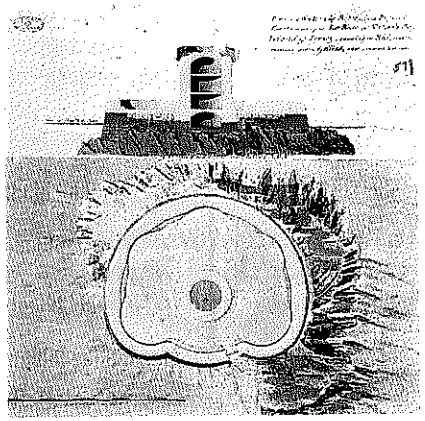
The proposal is to install two high speed panoramic lifts, which will speed customers up the face of the cliff from Snow Hill. Customers will be transported from Snow Hill to the top of the cliff in approximately 30 seconds, where they will arrive at an enclosed glazed platform. This will present attractive views both from the glass lifts and from the platform. From here, visitors will transfer to a walkway taking them to a Visitors' Centre, where they can continue their journey in the walkway, taking them directly into the Fort, or alternatively they can go outside to explore the ramparts. Within 6 minutes of leaving Snow Hill visitors to the Fort's sporting facilities will be at the reception, and ready to play sport. This will be a tremendous benefit to those who wish to exercise or play sport in their lunch hour, or straight after work, and will encourage greater use of the Fort's attractions.

At Snow Hill, the existing public conveniences will be demolished, along with the electrical substation (which could perhaps be re-clad, as a more economical alternative) in achieving the creation of an attractive, new open piazza, which will be an important improvement to the St Helier townscape. Provision will be made for new toilets, and the lift station will incorporate information kiosks, all housed under a sweeping canopy giving covered access into the lift cars.

The Visitors' Centre will include a coffee and sandwich bar, a heritage shop, an orientation point, heritage exhibition, including a camera obscura, plus the history of Jersey and the Fort. It will form a focus for the historic interest which the Fort provides, together with more general information on the island past and present.

The centre will provide information, trail-guides, maps, books and souvenirs for visitors coming to see the Fort as an historic monument and a place of beauty, rather than to participate in sport. At various strategic places around the Fort and its ramparts, interactive, interpretation points will be sited. The intention is to determine all the key points around the Fort where there is something to interpret - such as an historic event, something about the Fort's design or the people who lived there, and in particular views out over the town or harbour.

Entry into the Fort will be at high level, through a clear, open access point, and so will present views across the whole internal space, allowing visitors to orientate themselves, and also to encourage the use of the various facilities on offer.



Health and Fitness

Immediately inside the Fort's new north entrance, will be a large 'state of the art' health and fitness facility, with a large exercise area comprising the latest cardiovascular and resistance equipment, arranged on two levels, with associated changing accommodation and dance studio. The existing squash courts below the ramparts, will be refurbished.

This area will have its own reception, which will provide a focal point for advice on fitness programmes and active lifestyles. Associated with this will be an office, fitness assessment rooms, treatment/therapy rooms for sports injuries and complimentary therapies, such as aromatherapy and reflexology.

A relaxation space will be provided, centred around the saunas, steam rooms and spa pool area and located between the male and female changing rooms.

Children's Soft Play

This is provided at the southern end of the Fort, close to the southern entry point, from which it is clearly visible. This is an important, established facility, which will continue to provide soft play equipment. It provides an opportunity for young children to play in a safe, supervised, exciting environment. It will continue to be the island's premier soft play facility. This type of provision has become exceedingly popular and provides safe adventure. It will provide children with their own facility and also a place for children's parties. Built-in flexibility allows for frequent changes in layout and design, thereby holding the interest of young children and encouraging return visits.

Sports Centre of Excellence

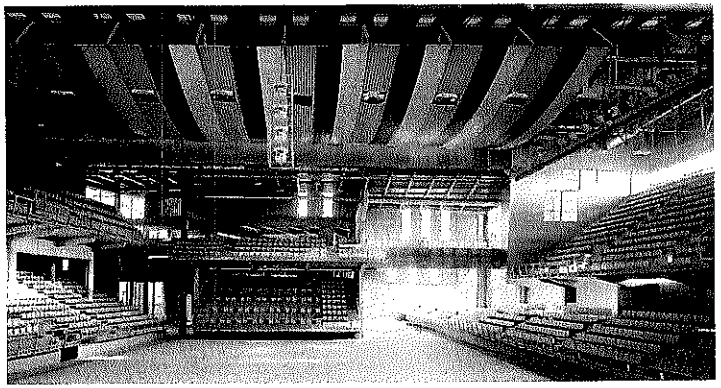
This will be a unique facility on the island, offering research and testing rooms, linked to training, sport development and sport science. This will help the island's young athletes develop their skills to the optimum level, improving their performance in competitions, island-wide, nationally and internationally and attracting teams and individuals from all over Europe to train in a comprehensive complex.

Sports Hall/Auditorium

An 8-badminton court sports hall will provide international standard facilities with permanent spectator seating for 1300 people, with the ability to have a centre court, premier event with spectator seating for up to 2000. The floor will be marked out with courts for the following sports:

- badminton
- basketball
- volley ball
- five a side football
- netball
- hockey

This hall can also provide a facility which can be converted quickly into an acoustically controlled auditorium with seating for up to 3000 people, the Queens Hall acting as a backdrop to a stage and also providing the backstage facilities including changing, storage. The stage will be a demountable structure, capable of adapting to the requirements of any event. For conferences, the Don Theatre and adjacent seminar rooms will provide break-out facilities for up to 300 - 400 delegates.



Catering

There are two catering outlets included within the design, with the option for a third.

As already mentioned, there is a sandwich and coffee bar within the new Visitors' Centre, which provides a good location for people visiting the Fort for the views and historic interest, but will also provide a stopping-off point for sports users on their way back to town.

Within the Fort building a café has been included below the children's soft play area and close to the climbing wall.

A third outlet could be located within the western bastion, which could be developed as a high quality, independent restaurant by a private developer.

All catering will be to a high standard to encourage use by all people visiting the Fort and not just for a quick drink after sports activity. Only a high standard of catering will engender good levels of income.

The Queens Hall

This will be divided horizontally to provide, at lower level, a hall for intensive sports use. This hall will have a clear ceiling height of 9.1m and will, therefore, also provide for international standards of play. The floor will be marked out for the following sports:

- badminton
- basketball
- volley ball
- five a side football
- netball
- hockey

Informal viewing can be offered from the first floor gallery, with additional toilets and access to the new second floor.

Indoor Bowls

The new floor inserted into the existing Queens Hall, will provide a dedicated area for indoor bowls with a new green comprising 6 rinks to international standard (34.75 x 4.6m).

Within this hall, there will be a small kitchen to provide tea making facilities and toilets together with lockers and space for viewing.

Climbing Wall

A new 3-dimensional climbing wall, providing authentic climbing practice, including a cave and ledge will be a unique facility curving around the outside wall of the Queens Hall. This will provide for international events with space for spectators, viewing from the ramparts or from the Parade Ground level.

Gymnastics and Club Facilities

A permanent gymnastics installation will allow club facilities to be used on a day to day basis, with club room back-up. This will provide all the standard gymnastics equipment, including parallel bars, horizontal bars, vaulting horse, pommel horse and rings. Safety and training harness will be fitted and there will be an exercise floor. Space for some informal spectator viewing will be provided.

Historic and Conservation Issues

A number of facilities have been added both inside and outside the Fort over the years, without any clear rationale and without a comprehensive planning policy in terms of spaces and their relationship with one another. Additional developments have been developed in the East Ditch for funfair type facilities and a Quasar facility.

As part of this scheme, all of these extraneous buildings will be demolished to return as far as possible to the purity of the original structure. The buildings planned for demolition include the current entrance in Fort Regent Road; the Quasar building; the skateboarding park and eventually, the swimming pool. This will not only expose more of the original structure, but will also improve the opportunities for historic interpretation.

The demolition of the swimming pool will not take place until the new Waterfront pool is open.

The Fort has intrinsic historic and architectural interest, which are presently not fully exploited. This aspect will be addressed in this scheme and greater use of the historic interest of Fort Regent will be made, encouraging people to use some of the circulation areas as a heritage trail.

The designs of the new visitors centre and the walkways have deliberately been made light and transparent, to contrast with the solidity of the Fort and to allow as much of the existing building and the views, to be retained.

Building Fabric

The existing building fabric is generally in quite sound condition. The walls, of course, are granite and extremely thick. The roof was recovered just a few years ago and so is in good repair.

The weakest part of the existing external envelope is the large area of glazing. This scheme includes for replacement of all glazing with a new, double glazed installation, designed to reduce solar gain and maintenance.

At the completion a sound, weathertight building will be provided, with relatively low levels of maintenance required.

Internally, new flooring and decorations will be provided throughout, bringing the whole building up to a modern, bright and attractive condition.

Phasing/Sequencing of Work

The work will be phased in such a way as to provide development in six stages. Each being a stand-alone stage which enables the remainder of the Fort to be kept open throughout the construction period.

The work will broadly commence at the north end of Fort Regent, with the new Snow Hill Piazza, Lift Access and Visitors' Centre being completed, along with the heritage trail.

This will produce quick results from the investments, allowing people to gain rapid, easy access and use of the new fitness facilities, which should yield good returns. It will also be the most dramatic and visible of the changes, which always helps to engender interest and support.

There is a reasonably long lead-in time before any construction can start, as there has to be close consultation and discussion with the Planning and Environment Committee and then working drawings, specifications and tender documentation have to be the prepared and assembled.

The table below outlines the phased programme.

Phase	New Facilities Created	Existing Facilities Affected	Facilities Still in Use	Cost
1	High Speed Access from Snow Hill. Visitors' Centre, links to Fort Regent and new entrance	Some outside garden areas	Whole of interior of Fort Regent and most of the external ramparts	£3,500,000
2	New Health and Fitness Suite and Aerobics Platform	Existing Health and Fitness Suite	All of remaining areas of Fort Regent	£4,035,000
3	Sports Hall & Gymnastics area. New changing accommodation	Gloucester Hall & current facilities in new changing area	Existing changing, health and fitness suite, Queens Hall, cafe/entertainment area, Don Theatre	£5,000,000
4	Refurbishment of remaining parade level and heritage	Meeting rooms, Table Tennis Rooms, toilets, restaurant, etc	Changing accommodation, health and fitness, Queens Hall, sports hall, cafe/entertainment area	£685,000
5	Children's soft play and climbing wall	Southern piazza area	Changing accommodation, health and fitness, Queens Hall, sports hall, meeting rooms, club rooms etc	£355,000
6	Queens Hall refurbishment	Queens Hall and associated accommodation	All of remainder of Fort Regent	£2,140,000

Summary

This scheme is intended to bring the Fort to life in a new way, by creating a workable, attractive sport and recreation facility, which is appropriate to its important, prominent location in the heart of St Helier. The scale of the building and facilities provided under one roof, develops the idea, originally mentioned in the 1996 Feasibility Study, of the Jersey Sports Village.

The adoption of this scheme will secure Fort Regent as the Island's home of sport and, indeed, will put Jersey firmly on the sporting map of Europe as it will have one of the most comprehensive sports facilities in the whole of Europe. It can only serve as a magnet for sports men and women to train, as well as giving local people the chance to enjoy magnificent facilities and so encourage and enable the island's young people in their sporting aims. This exciting new venture will not only provide excellent sporting facilities, but also will be Jersey's first 'Healthy Living Centre', with treatment and health facilities under the same roof as sports and fitness.

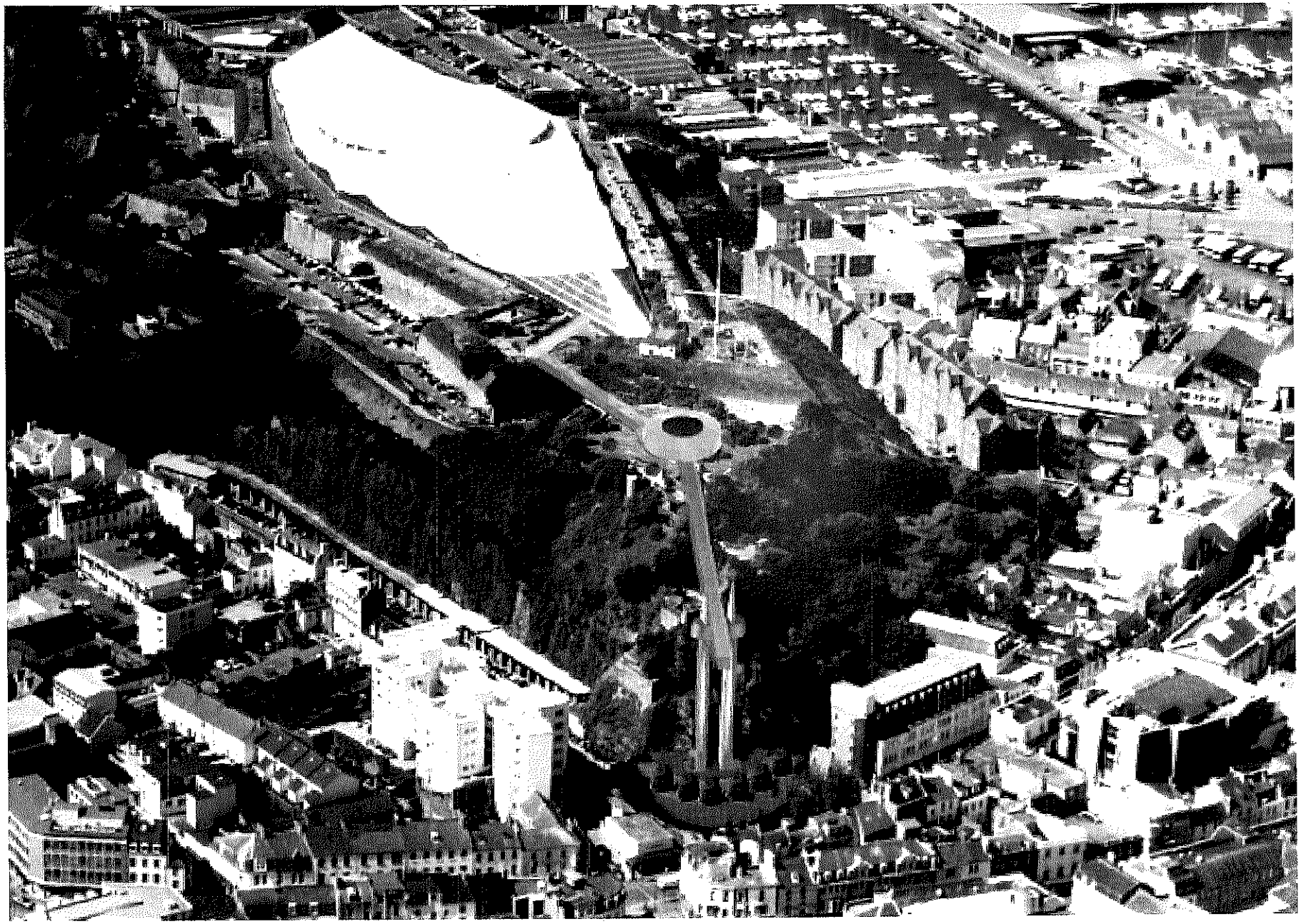
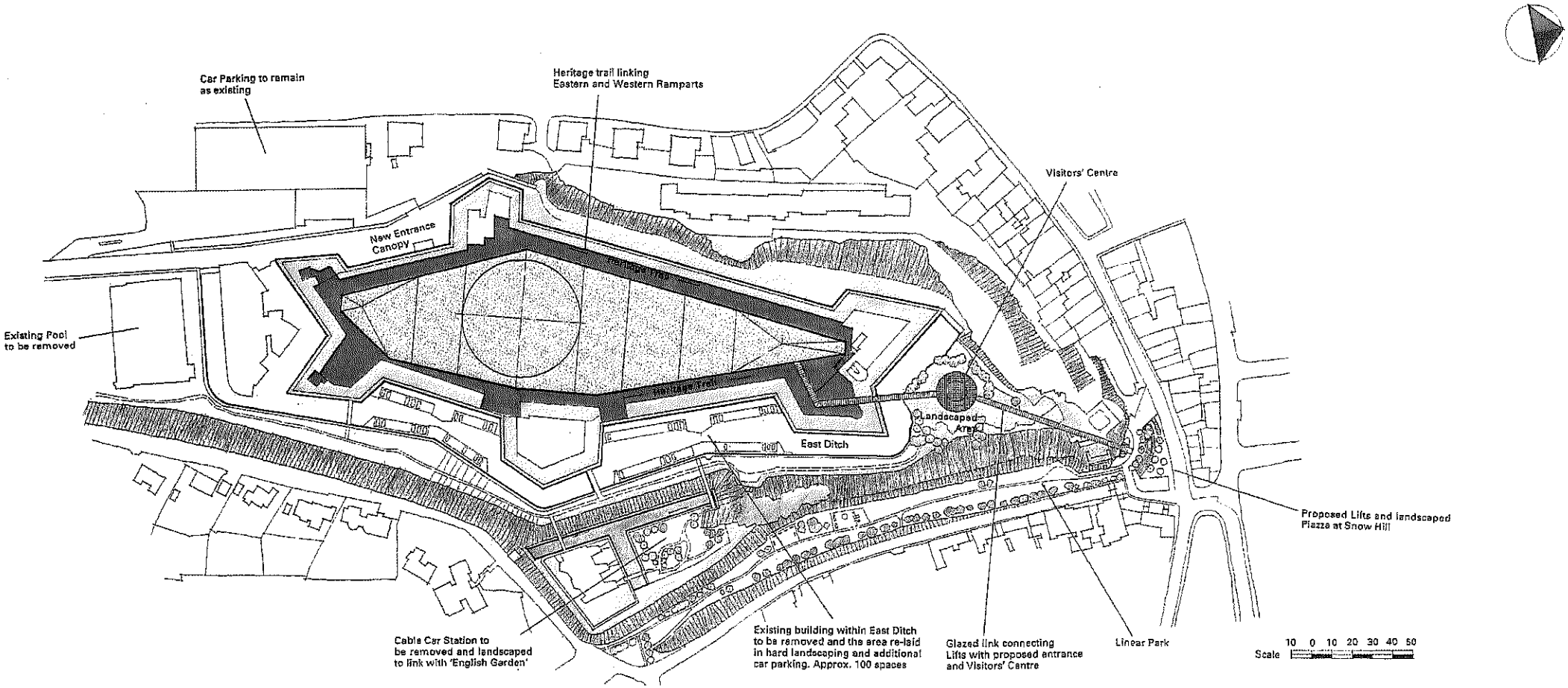
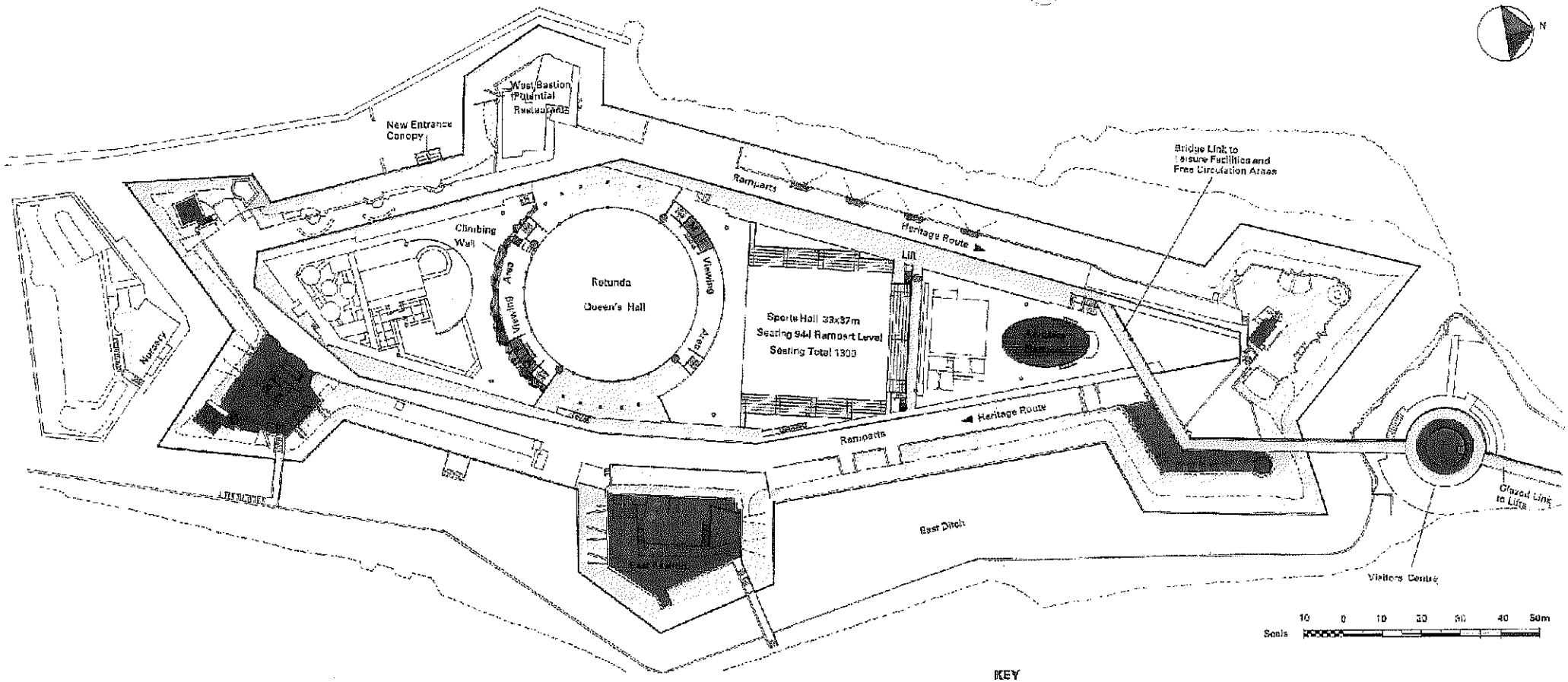


PHOTO MONTAGE



SITE PLAN

saville jones | architects

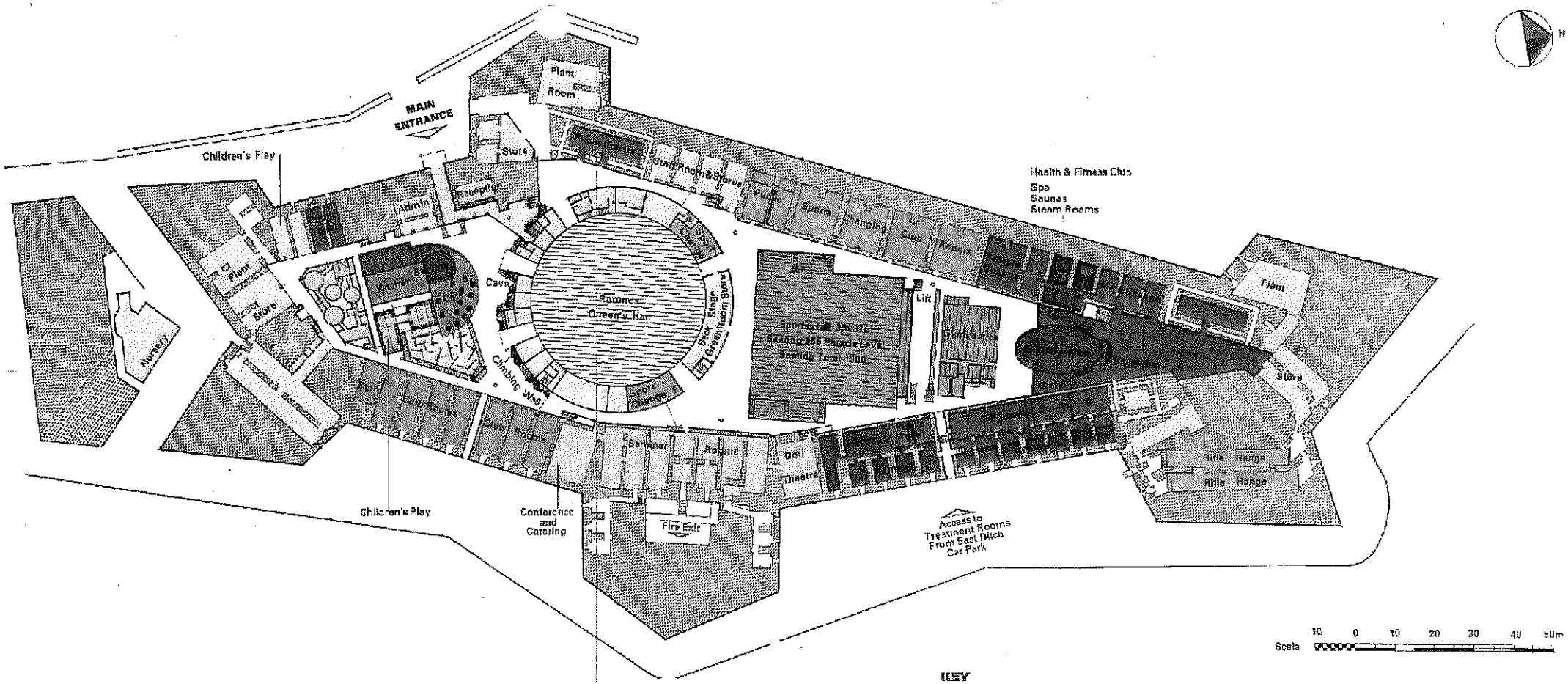


KEY

- Free Public Circulation Areas
- Heritage Interpretation
- Dry sports
- Health and Fitness
- Bowls
- Club Rooms
- Seminar Rooms
- Childrens Play
- Catering outlets
- Public Toilets
- Ancillary and non-public areas
- Ticket Control Points

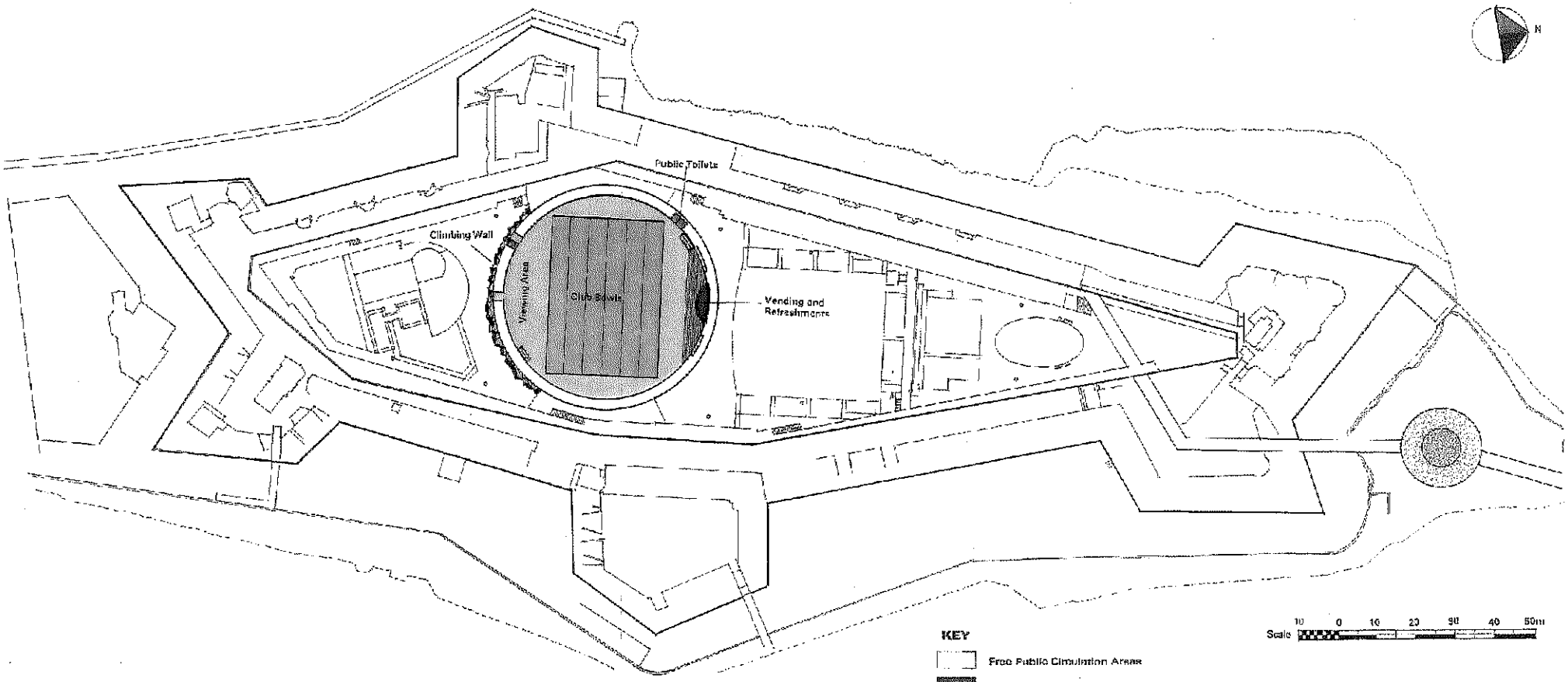
RAMPART LEVEL

saville jones | architects

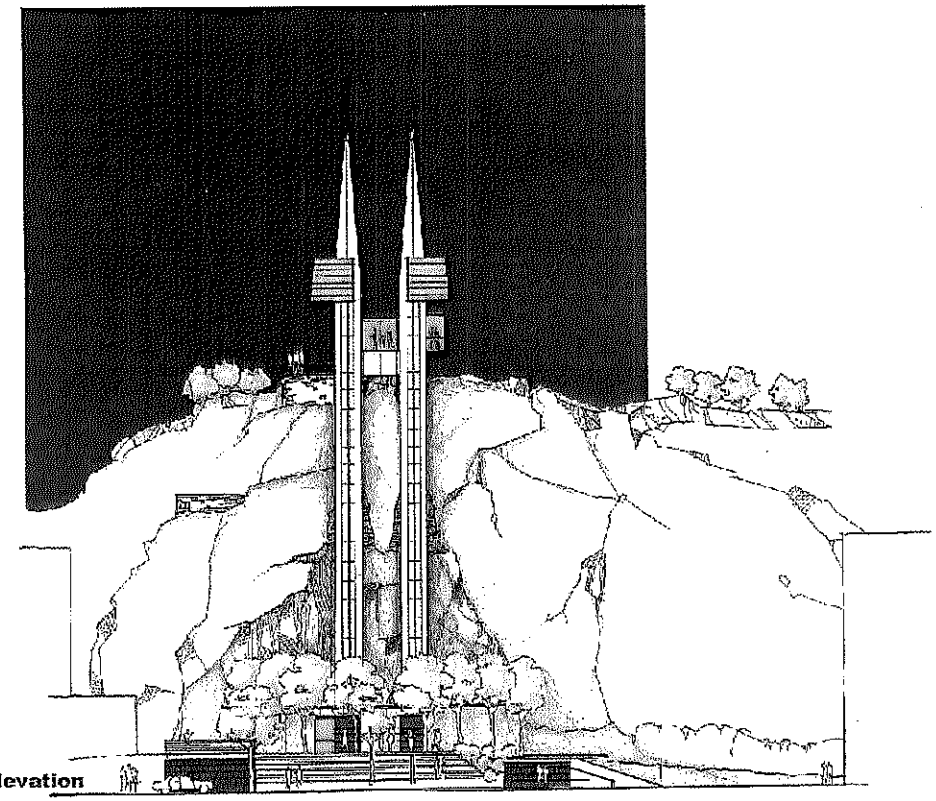


PARADE LEVEL

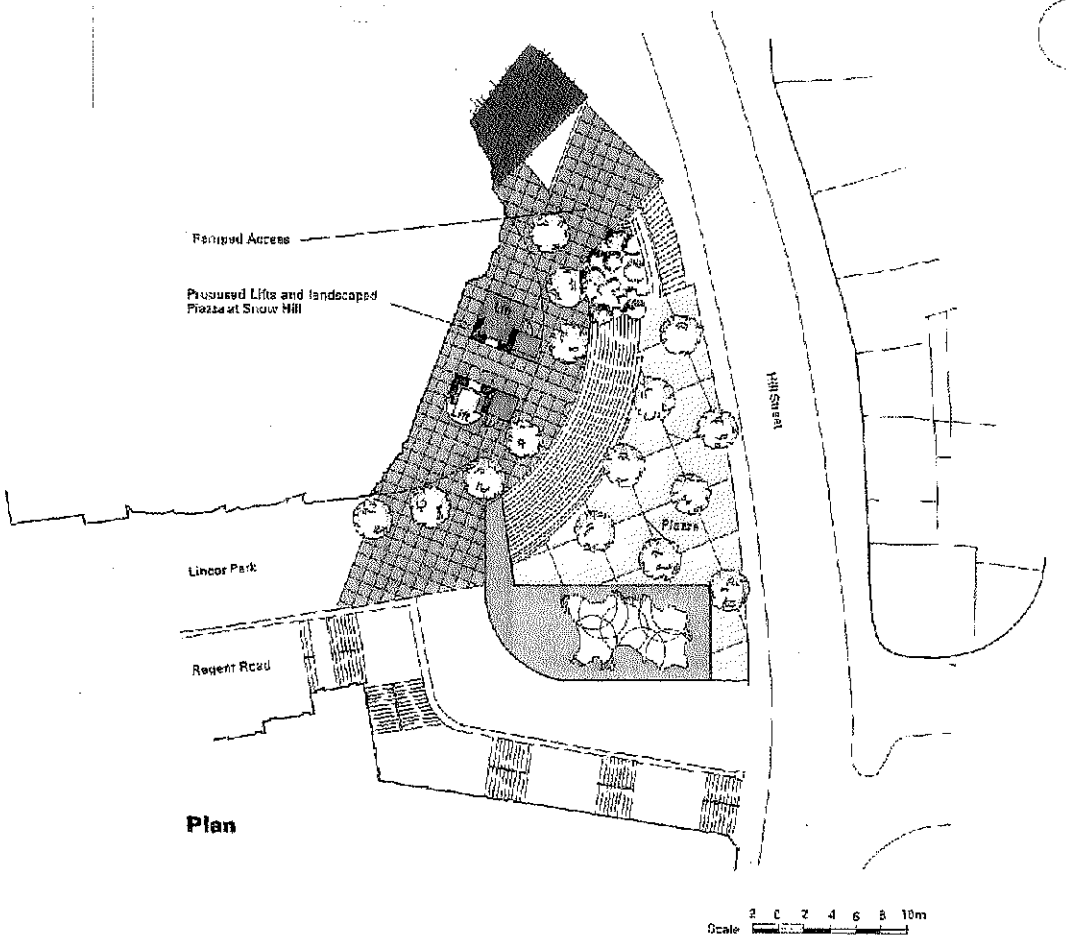
saville jones | architects



ROTUNDA LEVEL



Elevation

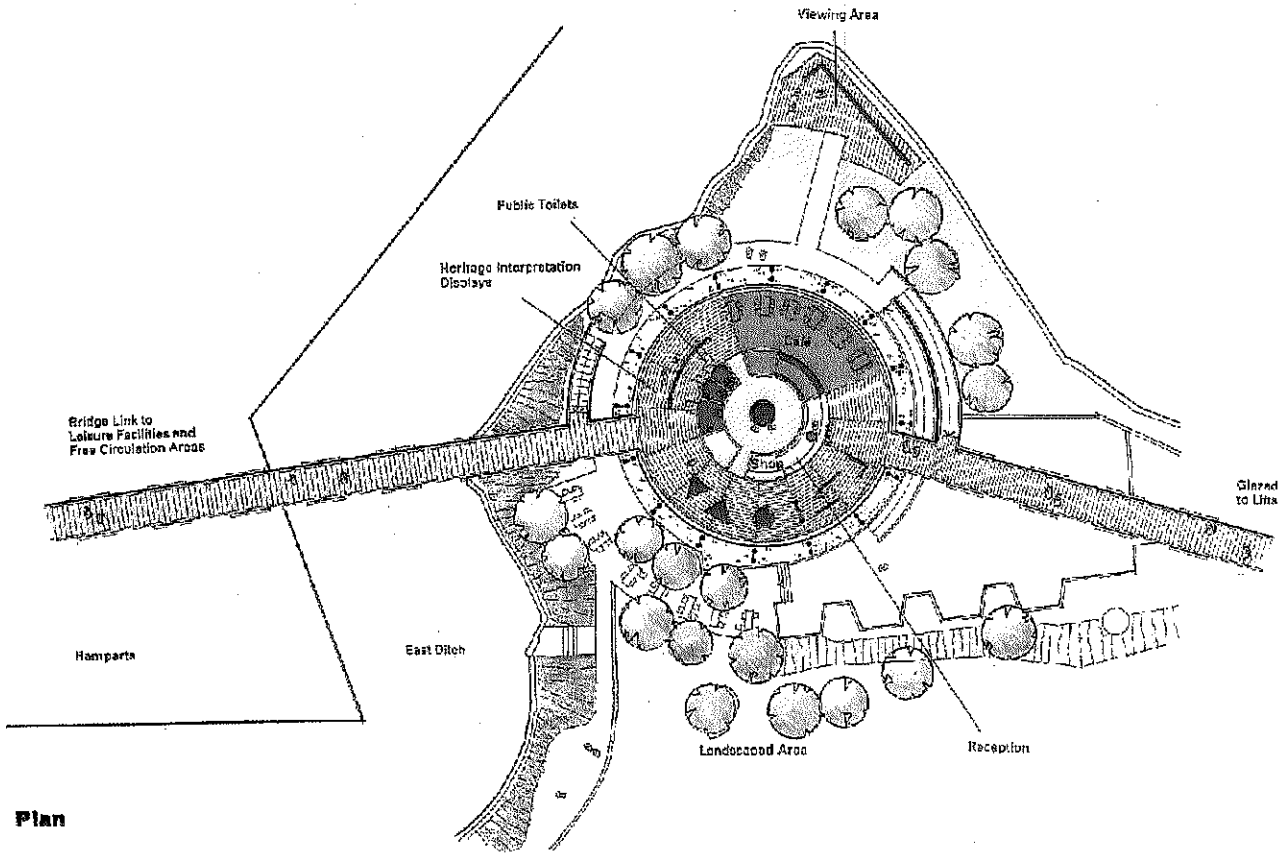


Plan

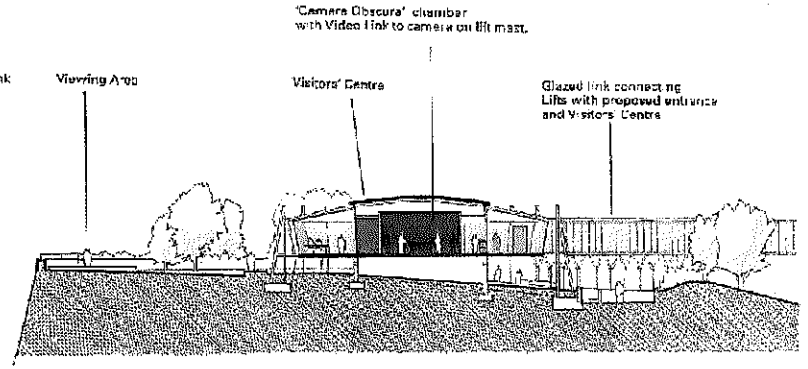
SNOW HILL ACCESS

ARTIST'S IMPRESSION
SNOW HILL PIAZZA

saville jones | architects



Plan

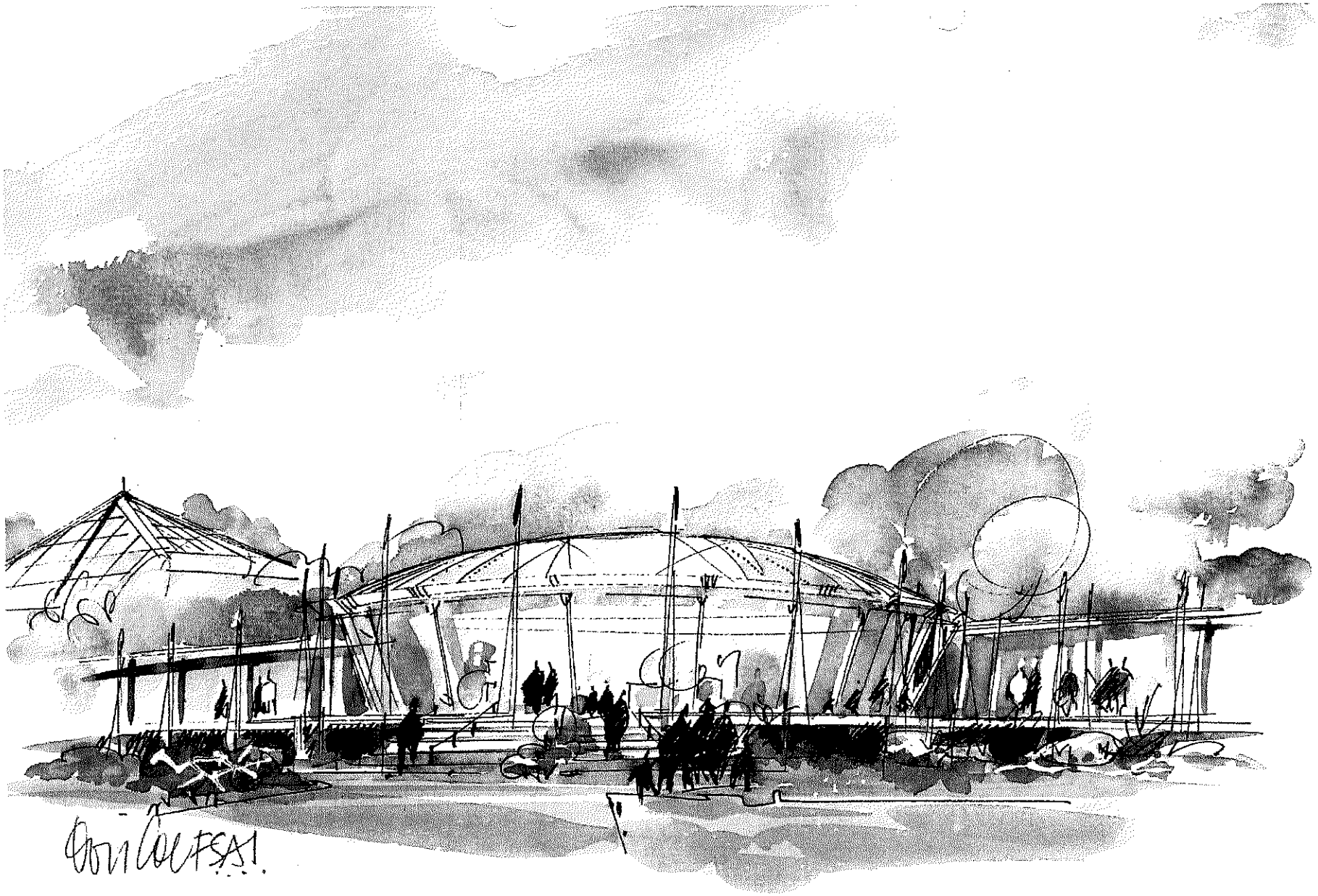


Section

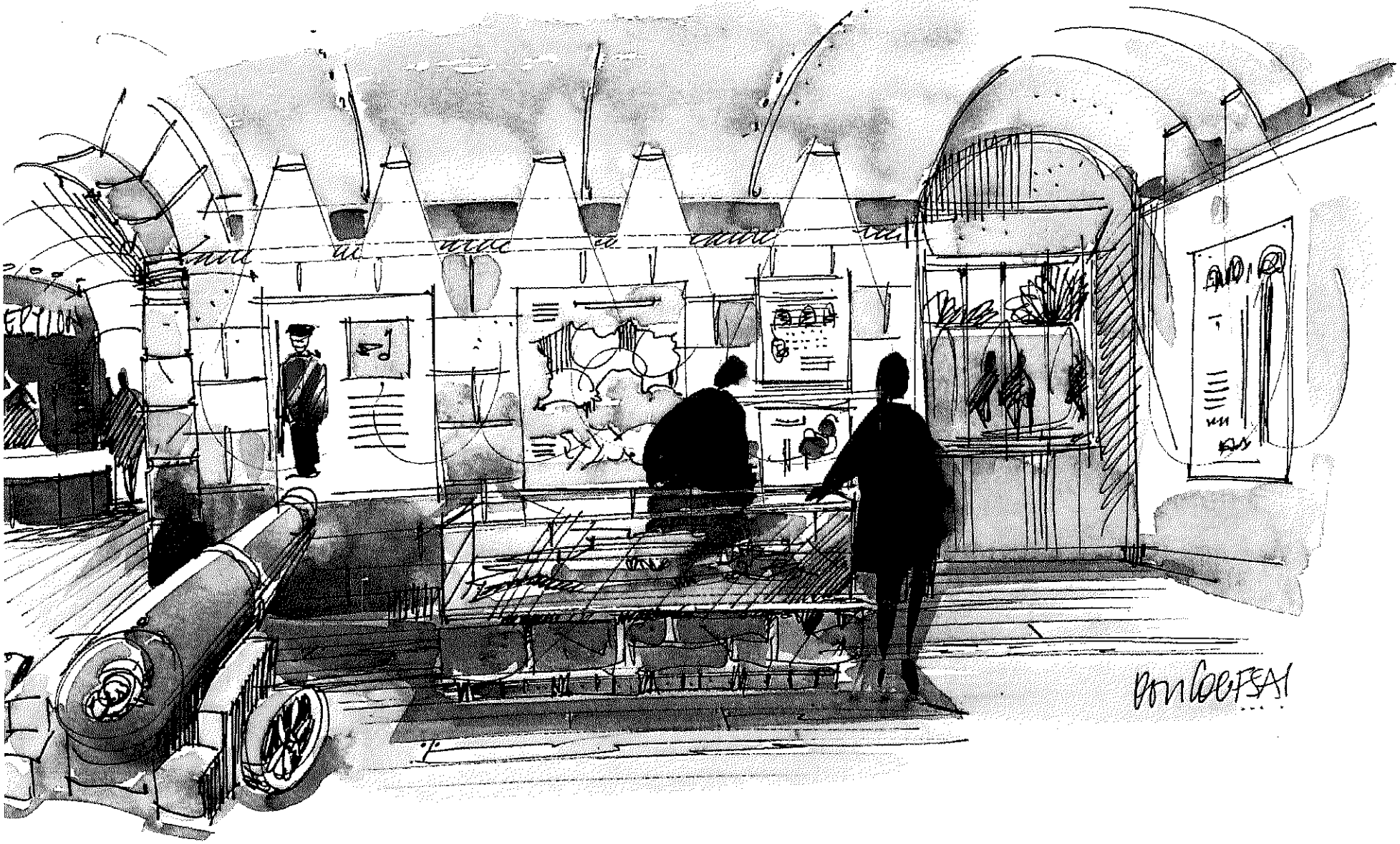
KEY

- Free Public Circulation Areas
- Heritage Interpretation
- Dry sports
- Health and Fitness
- Bowls
- Club Rooms
- Seminar Rooms
- Childrens Play
- Catering outlets
- Public Toilets
- Ancillary and non-public areas
- Ticket Control Points

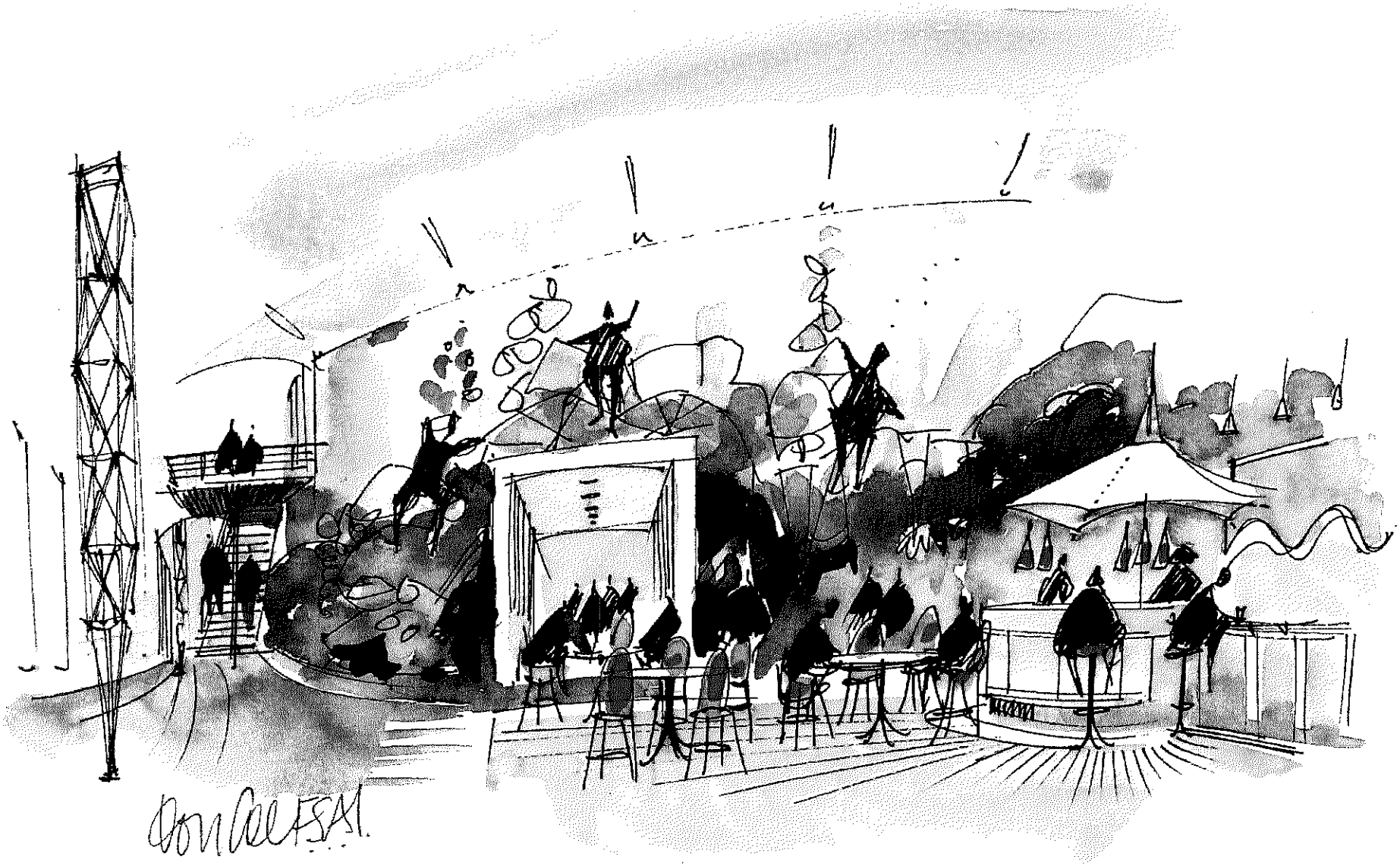
VISITORS' CENTRE



ARTIST'S IMPRESSION
VISITORS' CENTRE



ARTIST'S IMPRESSION
VISITORS' CENTRE INTERIOR



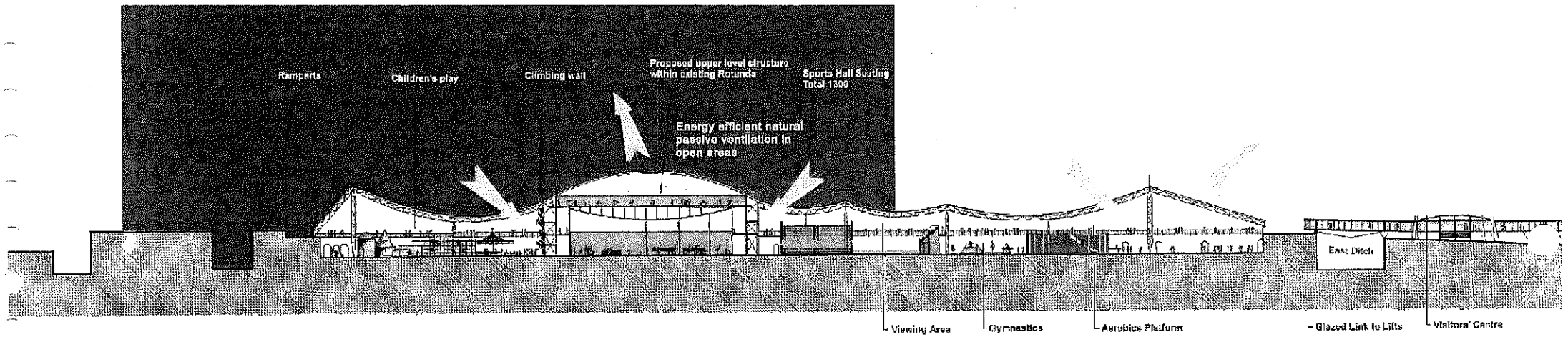
ARTIST'S IMPRESSION
CLIMBING WALL

Mechanical and Electrical Services

The proposed refurbishment of the sports and recreation facilities provides the opportunity to review the existing building services installation in view of the technological developments since the Fort's conversion in the mid 1970's. Developments in lighting, heating, ventilation controls and communication will provide the means to reduce energy costs and associated operating costs.

Energy

The Fort is currently an all electric installation and the reasons for choosing this solution in the seventies are still valid today. The problems of installing services in an existing building which has so many physical constraints, makes alternative options expensive. Coincidental with the proposed refurbishment of the Fort is the commissioning by the Jersey Electricity Co Ltd of the second interconnection with France, which should enable The Sport, Leisure and Recreation Department, as a major consumer, to negotiate preferential rates for the supply of electrical energy to the Fort. The new Building Bye-Laws (Jersey):1996 set standards for heating, lighting, ventilation and electrical services associated with the refurbishment.



		ADVANTAGES FOR THE USER	
		DOUBLE GLAZED UNIT WITH INTEGRAL BLIND	SOLAR CONTROL DOUBLE GLAZED UNIT
Day	SUMMER	Complete solar control of Sunlight and the transfer of heat internally by - Inclining the Blind slats Light Transmission - 0.76 Heat Transmission - 0.72	Partial Control of Sunlight and transfer of heat internally by - Utilisation of Solar Control Antisun glass Light Transmission - 0.53 Heat Transmission - 0.34
	WINTER	Maximum utilisation of Solar Energy and the transfer of Daylight by - Opening the Blind slats Light Transmission - 0.76 Heat Transmission - 0.72	
Night		Maximum retention of Heat and improved acoustic properties by - Closing Blind slats Light Transmission - 0.00 Heat Transmission - 0.00 'U' Value - 1.5	Partial retention of Heat by - Utilisation of low 'E' glass and Argon filled cavity Light Transmission - 0.00 Heat Transmission - 0.00 'U' Value - 1.10

KEY

- Free Public Circulation Areas
- Heritage Interpretation
- Dry sports
- Health and Fitness
- Bowls
- Club Rooms
- Seminar Rooms
- Childrens Play
- Catering outlets
- Public Toilets
- Ancillary and non-public areas
- Ticket Control Points

SECTION

Heating

The thermal comfort of participants in sport and leisure complexes represents a significant part of the operating costs of such facilities. Large areas with intermittent use, necessitate the careful design of control systems, heat source and methods of supply.

Systems such as ducted warm air, fan convectors, radiant heating and underfloor heating, all provide the means of close control with energy efficiency. However, different activities require different heating solutions, but it is generally considered that radiant heating is the most acceptable particularly as the maintenance costs are minimal.

Heat pumps provide an efficient method of heating and developments in the design of air to air heat pumps have been significant to the point where off-the shelf units now have a coefficient of performance of 3 to 1, even in ambient temperatures of -10deg.C (coefficient of performance COP is the rate of energy input to energy output - ie COP of 3 to 1 = 3kW of heat output for 1kW of energy input). However, there is a cost penalty in the initial capital cost but reverse cycle heat pumps will provide cooling and heating from the same source.

Systems

Modern sport and recreation facilities require high standards of lighting, ventilation and heating. Fort Regent creates its own special problems in these disciplines due to the nature of the construction of the building.

Lighting

Where possible, natural daylight will be integrated with the architectural design of the refurbishment, however, artificial lighting is required to a minimum standard to large areas to enable the activities envisaged to be undertaken in a safe and comfortable environment. Energy efficient luminaires together with modern controls can reduce operating costs by up to 60%. Card control of lighting and heating is cost effective for areas with charged facilities. In addition, occupancy sensors with photoelectric controls provide economical control and lighting in areas of intermittent use. It is envisaged that enhanced security and decorative lighting will be included in the refurbishment proposals and control of these facilities together with external areas, such as car parks, will be included in the new control facilities.

Structural Concept

The development consists of a number of exciting structural proposals.

Most significantly, the redevelopment will open up a whole new access route to the complex from the town centre, by way of a new lift tower and glazed walkway link. The new tower will be a pre-cast concrete structure to maximise the speed of construction and to provide a high quality finish. Standing approximately 35m high it will be restrained against the granite cliff face at mid-height. The walkway link will be a steel structure with minimal structural elements to support the glazed enclosure.

At the northern end of the complex, a new visitors' centre will be built to act as an orientation point for visitors entering the complex via the new lift tower and walkway. The centre will be a single storey steel structure with glazed walls.

In the existing complex building, a number of changes of use will be made to the spaces in between the northern tip of the building and the central rotunda. The existing squash courts and their surrounding concrete mezzanine floors will be demolished and replaced with a new exercise and aerobics area. A new bridge link will span 23m over the exercise area, between the existing rampart walkways.

Approximately 3000 new spectator seats are to be provided in the adjacent sports hall. These will be split between fixed seating on new lightweight steel tiers at ground and first floor levels and retractable 'bleacher' seating.

Finally, in the Queens Hall itself, approximately 1400 sqm of new floor space will be created to provide a new indoor bowls facility, by constructing a new suspended floor supported on the existing columns around the perimeter of the hall. The new floor, which is circular on plan, will be supported on a grillage of steel members, which hangs in a catenary, so as to form a bowl shape when viewed from below.

All of the new structures within the existing building envelope will be steel. Wet trades will be avoided. Floors will generally be of timber construction or timber decking supported on cold rolled steel joists.

It is anticipated that the redevelopment works will be phased so that the complex will remain open to the public throughout.

Description of Structure

Lift Tower

The lift tower stands approximately 35m high and contains two external lifts, linking street level with the new glazed walkway at the top of the cliff.

The two lift shafts are separate concrete channels linked at mid-height, where they are restrained against the rock face and, at walkway level, where they support the steel structure. Above the walkway level, each lift shaft has a motor room, above which the tower rises to a decorative pinnacle.

In order to obtain a high quality concrete finish and to minimise the temporary works required during construction, the towers are constructed from pre-cast concrete segments, which are 'stitched' together by in-situ reinforced concrete infills (see diagram). These infills are designed to take all the axial stresses resulting from gravity loads and wind loads.

Hence, the structural function of the pre-cast elements is to transfer shear forces between the in-situ infills when the tower is subjected to wind loads. It is envisaged that the pre-cast elements will be bedded together with a relatively soft mortar.

The key advantages of using pre-cast concrete for the lift tower, rather than steel are that the need for additional cladding panels is avoided and that a concrete tower is inherently more durable than a clad steel tower would be. It is also thought that an unclad steel tower would be more aesthetically inappropriate for the site.

Visitors' Centre and Walkway

The Visitors' centre is a 20m diameter, single storey steel building. The roof is a domed steel grillage, in the same style as the existing Queens Hall roof, but on a smaller scale. The roof is supported around its perimeter by sixteen steel columns, hence no internal columns are required.

The centre has a timber hardwood suspended floor, supported on steel beams approximately 1m above ground level.

Ventilation

Sport and recreation activities require high levels of ventilation to prevent the build up of odours, heat and humidity. Where practical, natural ventilation using the buoyancy of warm air and wind pressure will be utilised and this system is particularly appropriate in sports halls, where openings at high level can provide exhausts.

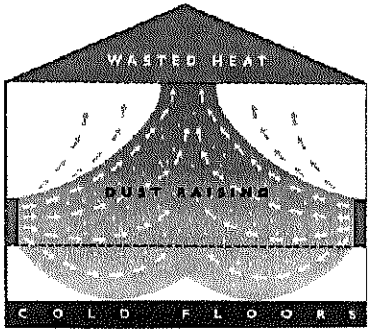
However, mechanical ventilation will be applied as relevant and this means of ventilation with the appropriate controls, such as speed controllers, modulating dampers and humidity controllers will provide an effective and energy efficient environment controls of the facilities.

During periods of low ambient temperature, larger quantities of energy are utilised to warm the incoming air. It is, therefore, essential that some form of heat recovery is incorporated into the mechanical ventilation design. This will take the form of cross flow heat exchangers, run around coils, desiccant wheels or heat pumps as appropriate.

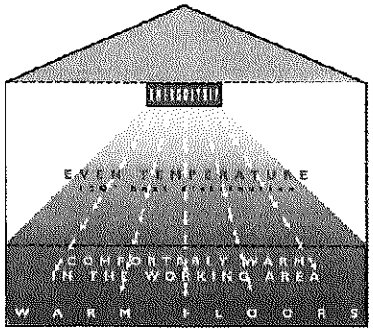
In areas such as the proposed indoor bowling facility, displacement ventilation will be considered which is a very effective form of ventilation in large spaces.

Water Resources

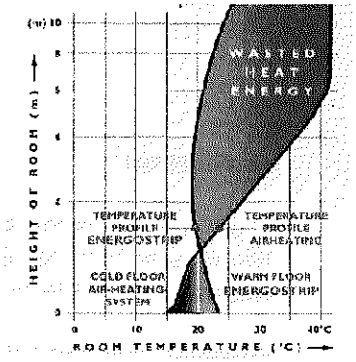
Water consumption in sport and recreation centres can account for a significant part of the operating costs and automatic control of this resource will assist in the reduction of consumption. Flow controls, presence detection and monitoring are further means that the right management techniques can be applied to monitor costs.



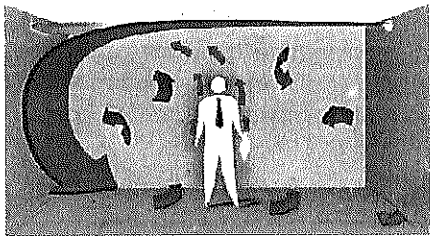
With conventional heating, hot air rises leaving low temperatures at floor level resulting in a lower standard of heating comfort



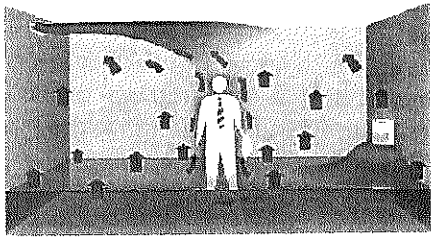
Electrical radiant high level heaters combined with under floor heating is considered the most acceptable method of providing a comfortably warm environment.



Large areas with intermittent use necessitate the careful design of control systems, heat source and methods of supply to give the most cost effective system.



Where practical, natural ventilation using the buoyancy of warm air and wind pressure will be utilised, this method being particularly appropriate in sports halls, where high level openings can provide exhausts.



Mechanical ventilation where relevant can be utilised with speed controllers, modulating dampers and humidity controls to provide an effective and energy efficient environment. In areas such as the proposed indoor bowling facility, displacement ventilation will be considered the most appropriate.

HEATING AND VENTILATION

Controls

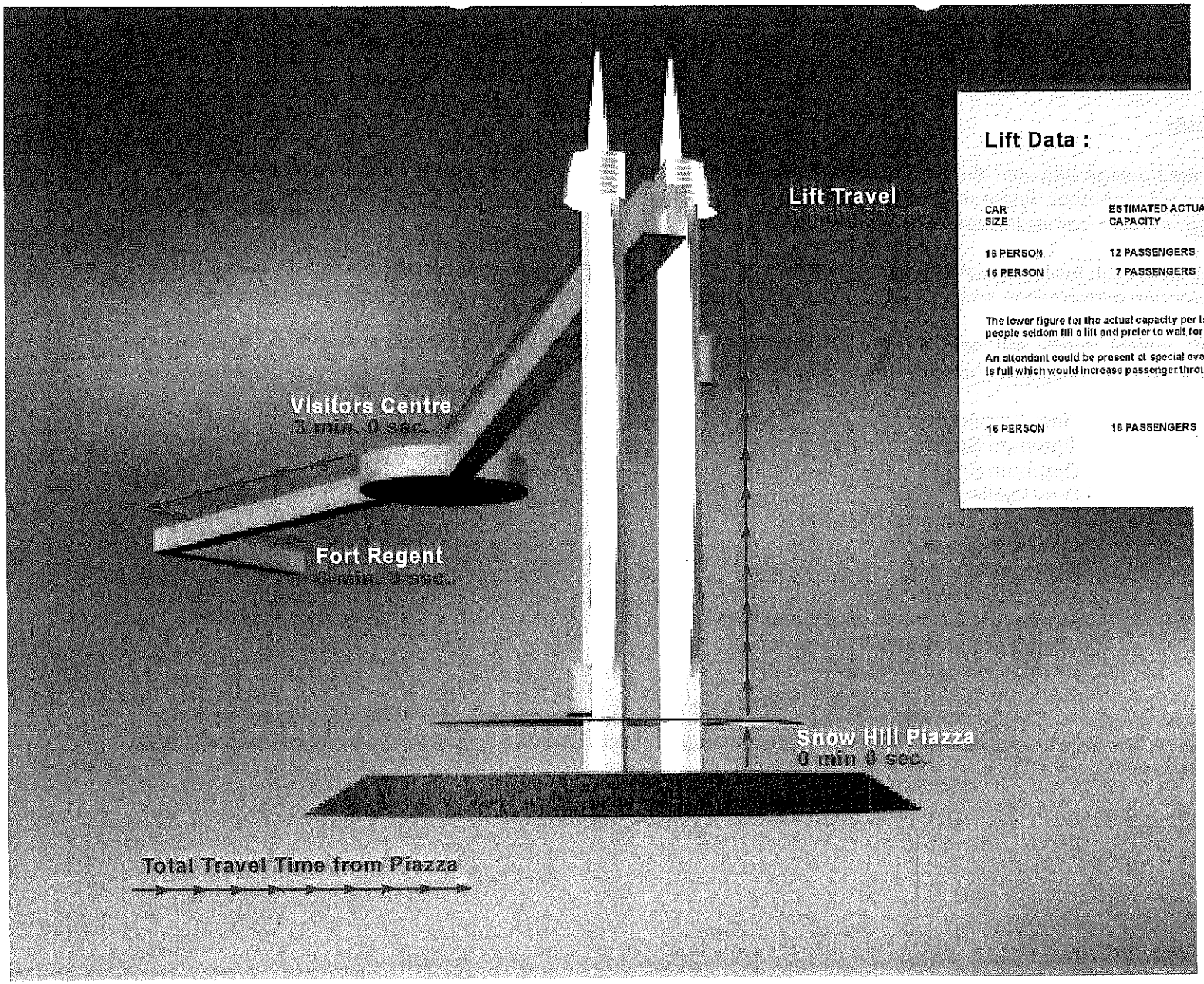
Integrated design between the building fabric and the services will lead to efficient systems, however, Building Energy Management Systems (BMS) can control and monitor a range of building services automatically, often through modern communications on more than one site.

Centralising such facilities provides flexible systems and is the source of a great deal of information on energy use, consumption performance, performance of equipment and system operators, maintenance requirements and trends.

A BMS control facility will include temperature sensors, weather compensator, optimisers and frost protection together with more specific functions as detailed hereunder:

Time Programme
Optimum Start
Optimum Stop
Duty Cycling
Maximum Electrical Demand
Plant Run Times
Status Monitoring
Efficiency Monitoring
Monitoring Environmental Conditions
Energy Consumption Monitoring
Energy Cost Monitoring

In an area the size of Fort Regent and with the many and varied activities envisaged, a BMS would provide a tool with which The Sport, Leisure and Recreation Department will ensure optimum use of the systems installed within the building.



Lift Data :

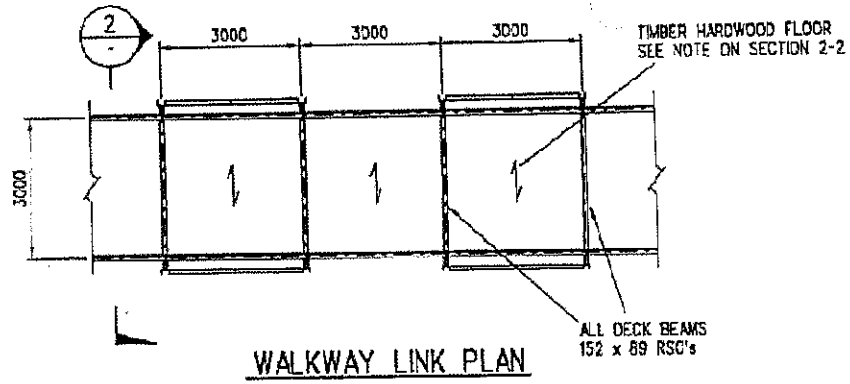
CAR SIZE	ESTIMATED ACTUAL CAPACITY	PASSENGERS / Hr EACH WAY
16 PERSON	12 PASSENGERS	666 / Hr
16 PERSON	7 PASSENGERS	438 / Hr

The lower figure for the actual capacity per trip is based on the fact that people seldom fill a lift and prefer to wait for the next.

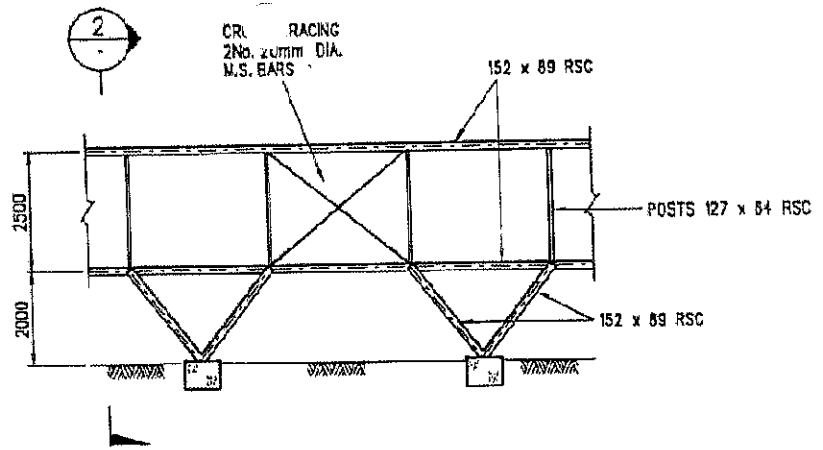
An attendant could be present at special events to ensure that the car is full which would increase passenger throughput to :

16 PERSON	16 PASSENGERS	800 / Hr

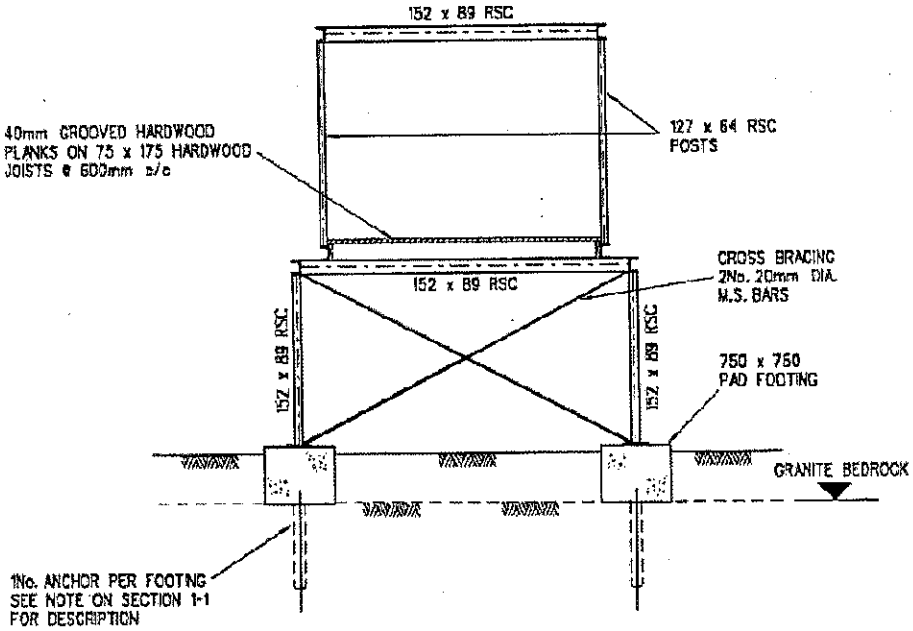
SNOW HILL ACCESS
MODEL VIEW PERSPECTIVE



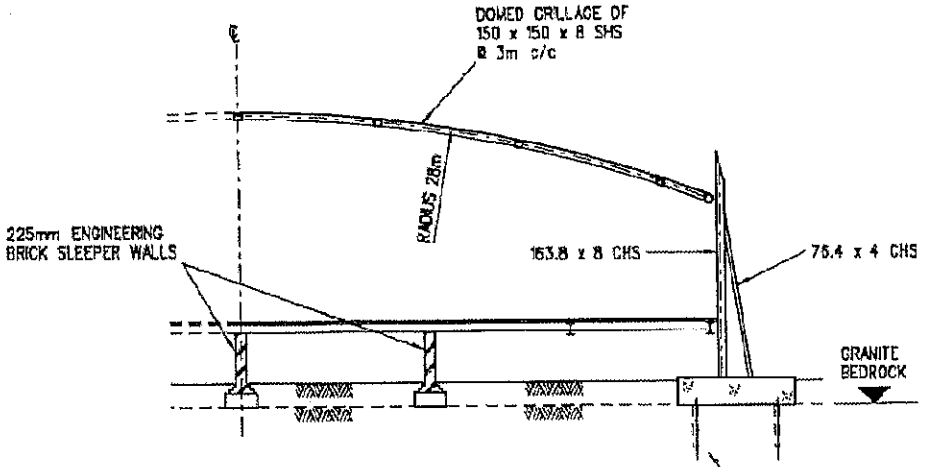
WALKWAY LINK PLAN



WALKWAY LINK ELEVATION



WALKWAY LINK SECTION 2 - 2 (1:50)

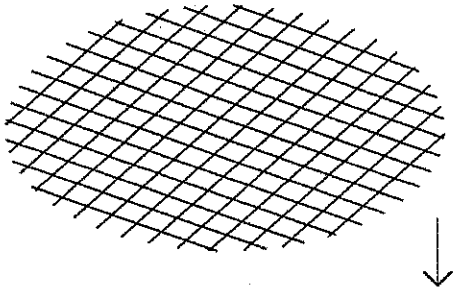


VISITOR CENTRE SECTION 1 - 1

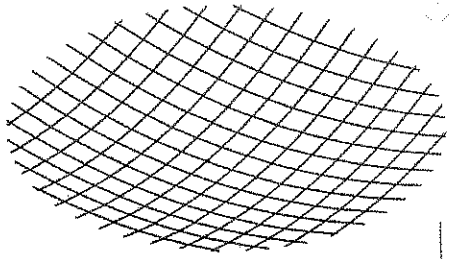
ADAMS · KARA · TAYLOR consulting civil and structural engineers			PROJECT FORT REGENT REDEVELOPMENT JERSEY SPORTS VILLAGE		
DRAWN JW	SCALE 1:100	CAD FILENAME s008.plt	DATE JUNE 1999	CHECKED JD	STATUS PRELIMINARY
TITLE WALKWAY LINK & VISITOR CENTER PLANS & SECTIONS			PROJECT No. 1510	DRAWING No S008	REVISION P1

PLOT DATE 10 JUN 1999

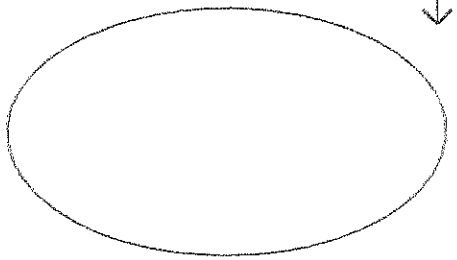
WALKWAY LINK & VISITORS' CENTRE PLANS AND SECTION



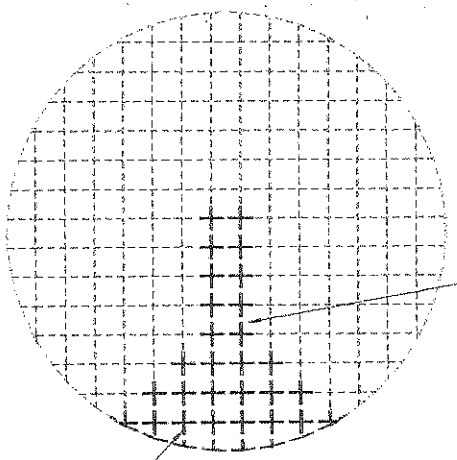
FLOOR BEAMS:
203 x 203 UC 46



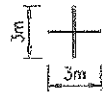
CATENARY MEMBERS:
273 x 10 CHS



RING BEAM:
323 x 10 CHS

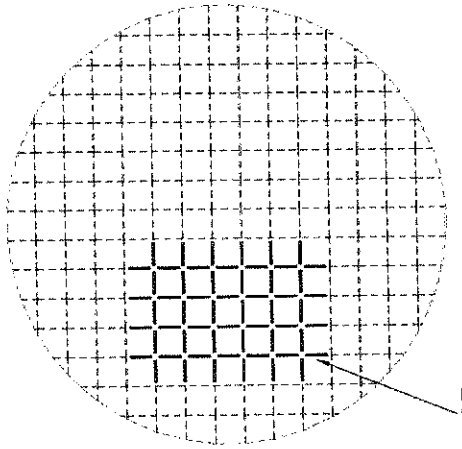


TYPICAL PREFABRICATED CATENARY ELEMENT DELIVERED TO SITE:



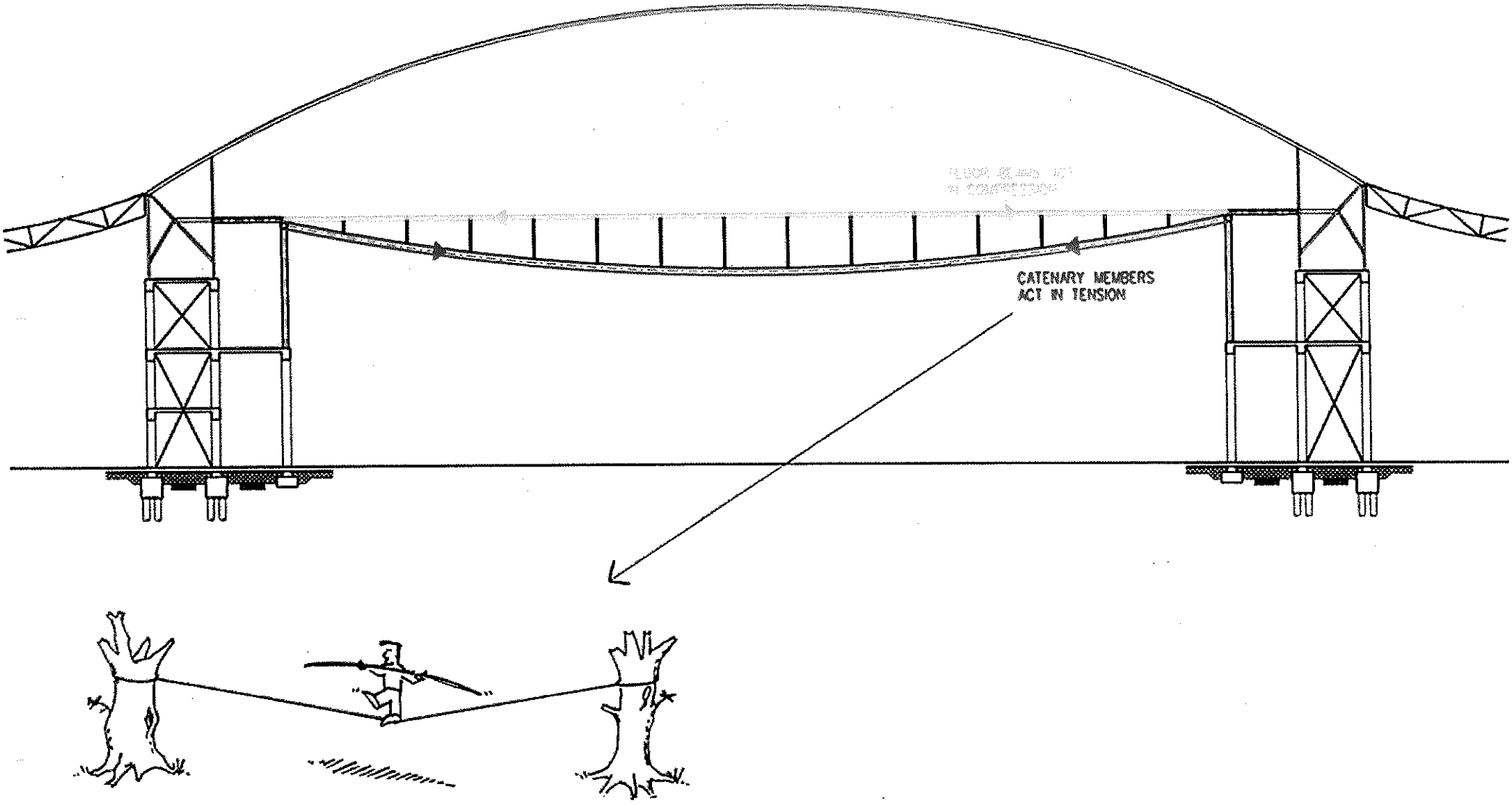
SHOP WELDED NODE JOINT

PREFABRICTED ELEMENTS BOLTED TOGETHER ON SITE (SEE DRG No. 1510/S004)

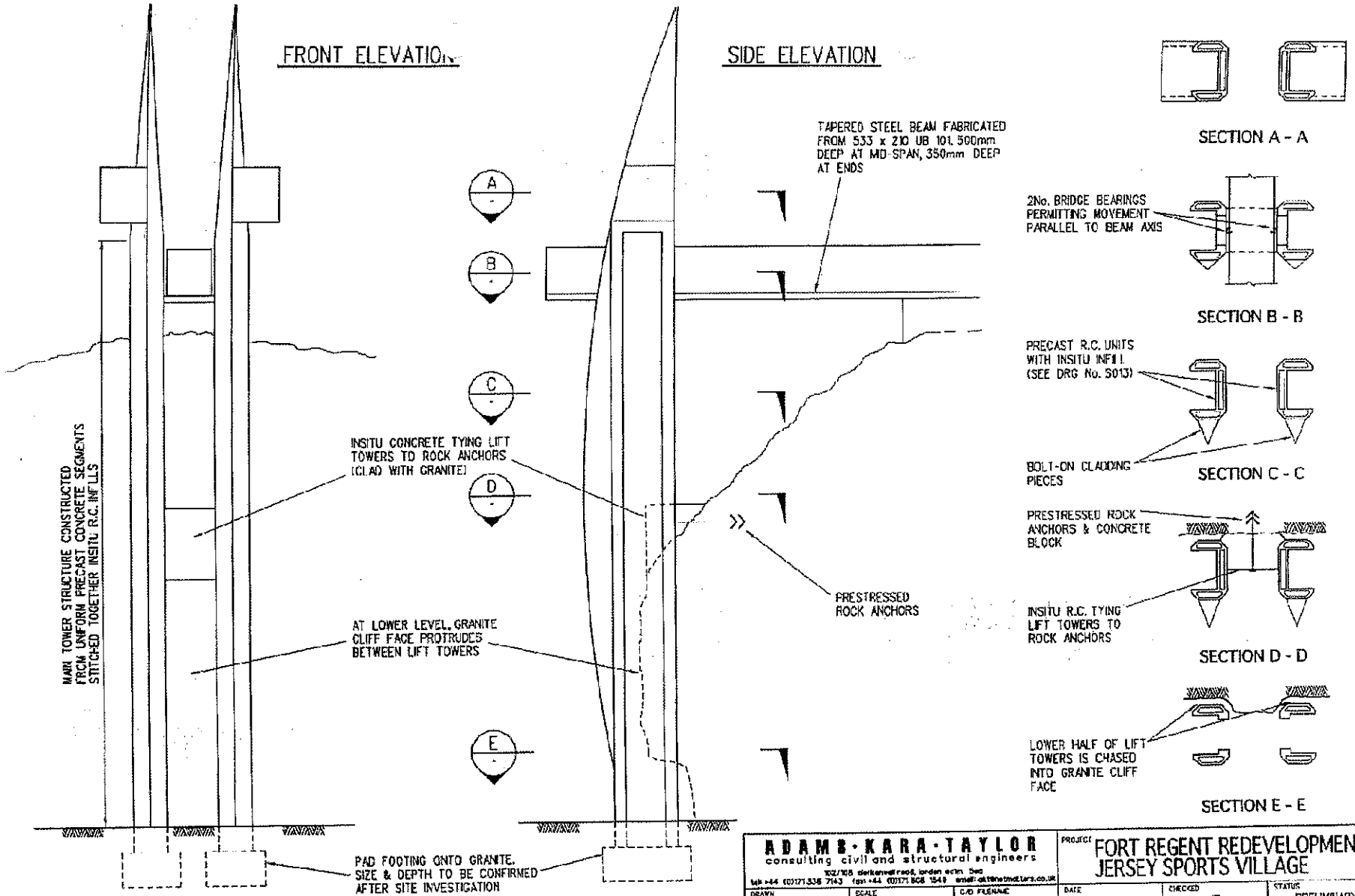


FLOOR BEAMS DELIVERED TO SITE IN 3m LENGTHS & BOLTED TOGETHER AT NODE JOINTS (SEE DRG No. 1510/S005)

CONSTRUCTION OF QUEENS HALL
INFILL FLOOR



STRUCTURAL PRINCIPALS OF QUEENS HALL
INFILL FLOOR

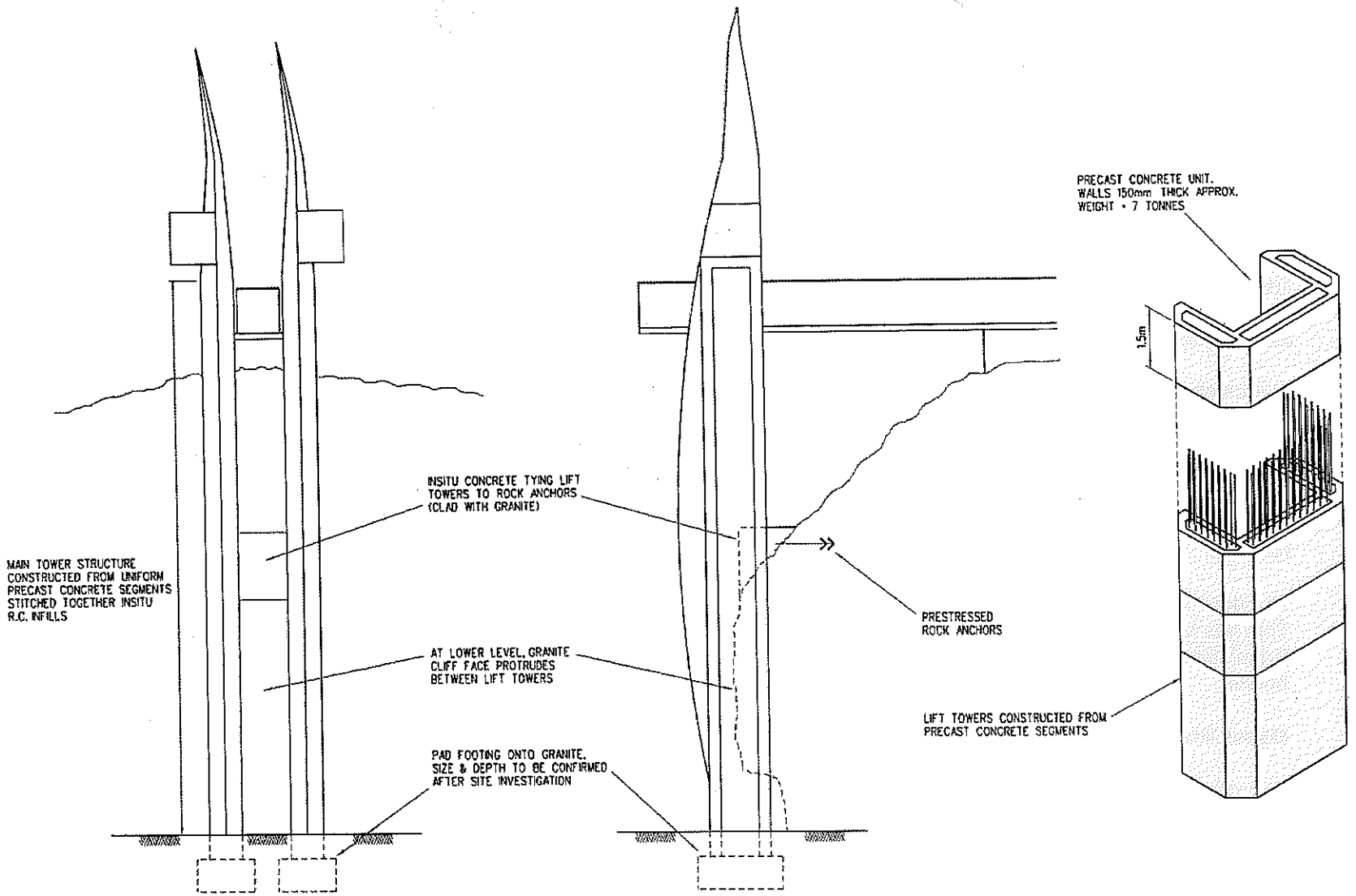


REV DATE DESCRIPTION BY CHECKED

ADAMS·KARA·TAYLOR consulting civil and structural engineers			PROJECT FORT REGENT REDEVELOPMENT JERSEY SPORTS VILLAGE		
DRAWN JW	SCALE 1:200	C/D FILENAME s012.plt	DATE JUNE 1999	CHECKED JB	STATUS PRELIMINARY
TITLE LIFT TOWER ELEVATIONS & SECTIONS			PROJECT No. 1510	DRAWING No S012	REVISION P1

PLOT DATE 1 JUN 1999

LIFT TOWER ELEVATIONS AND SECTION



LIFT TOWER STRUCTURE

Queens Hall Floor Infill

The Queens Hall infill floor is 44m diameter and it is supported on new steel columns placed on top of the 36 existing reinforced concrete columns around the perimeter of the hall.

The as-built drawings of the existing reinforced concrete columns show that they have some spare capacity, so a form of structure was chosen that shares the new loads as evenly as possible onto the existing columns, thus avoiding the need for strengthening works and underpinning.

The catenary form of the floor was chosen to mirror the dome structure of the rotunda roof and maintain the distinctive visual identity of the building. The bowl shaped catenary structure mirrors the dome of the roof not only in appearance, but in structural terms as well; whereas the grillage elements of the existing dome structure act in compression, the grillage elements of the catenary act in tension. The large horizontal tying forces created by the tension members are counteracted by the grillage of floor beams which acts as a stiff diaphragm, in compression. (See diagram). Hence only vertical loads are carried by the new and existing columns around the perimeter of the rotunda.

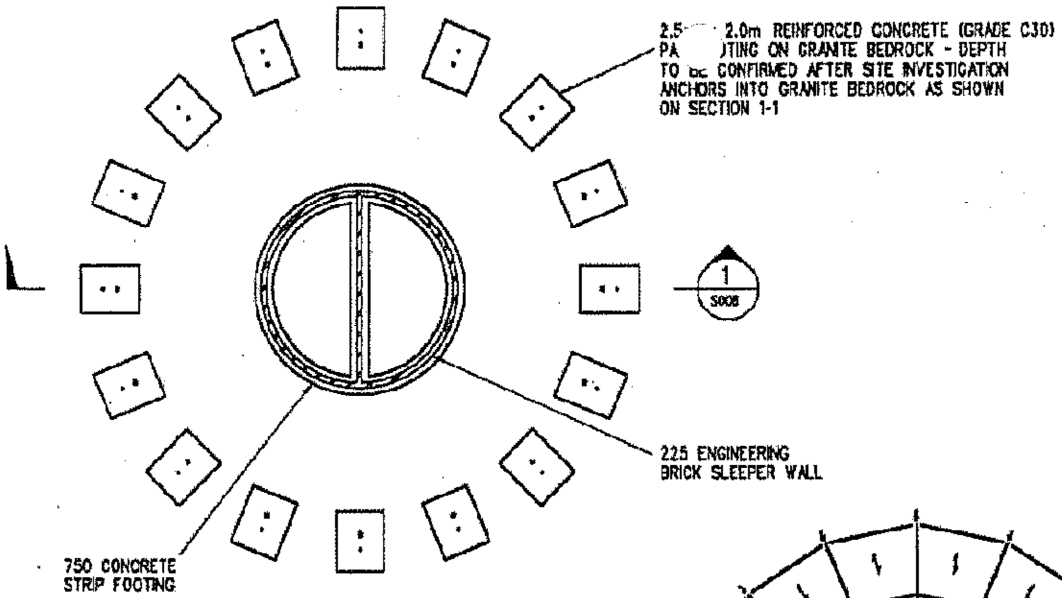
The floor finish of the new Queens Hall infill floor is constructed from timber decking on cold-formed steel joists. This has been chosen in order to minimise cost and weight and to avoid the use of wet trades. The advice of the British Bowling Association has been sought and they have confirmed that timber decking is acceptable for playing bowls.

Other Structures

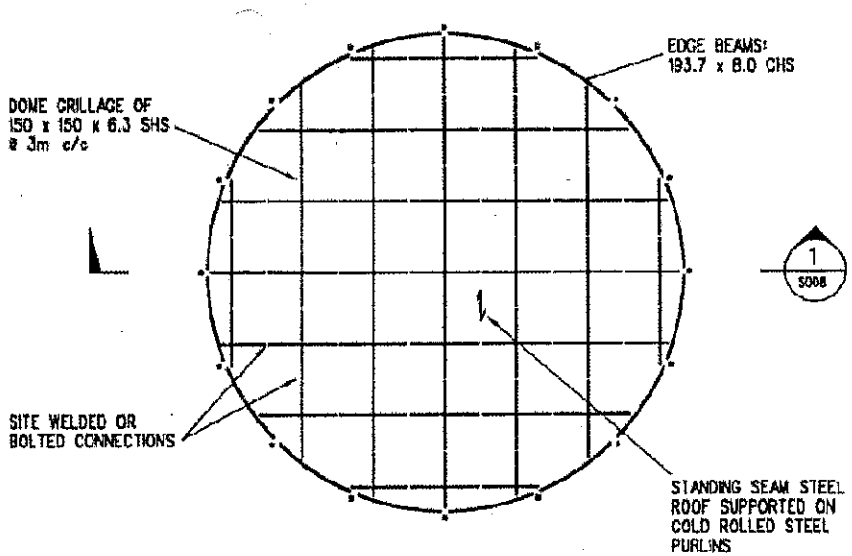
The other structural work in the redevelopment project consists of a new walkway link bridge spanning 23m between existing rampart walkways at the northern end of the site and new tiered seating at ground and first floor levels around three sides of the new sports hall.

The link bridge is a bow-string structure with steel beams strengthened by high-tensile stainless steel tie rods.

The tiered seating is supported on a steel structure with exposed steel columns. The primary and secondary beams are hot-rolled steel sections which support terrace seating levels constructed from cold-formed sections with timber plywood decking.

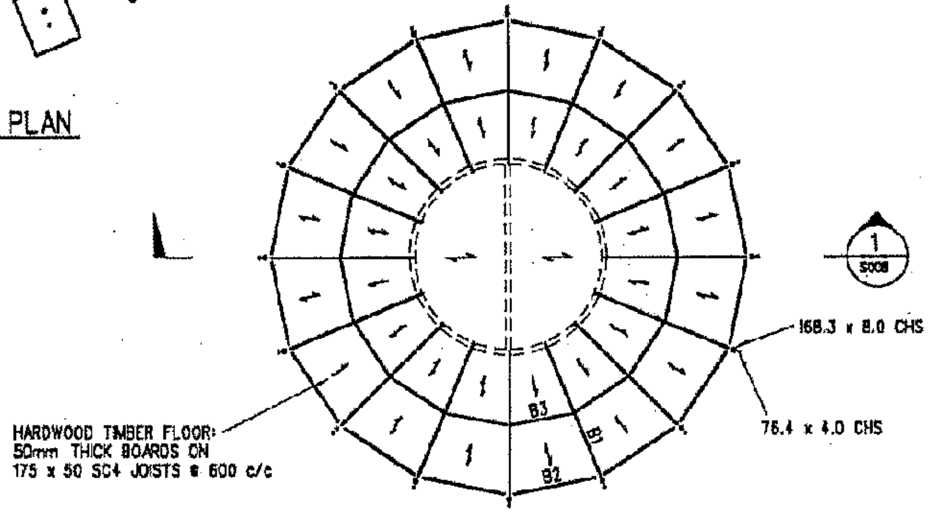


FOUNDATION PLAN



ROOF PLAN

B1	406 x 178 UB 60
B2	254 x 146 UB 37
B3	254 x 146 UB 37



FLOOR PLAN

ALL VISITOR CENTRE STEELWORK GRADE 43B

ADAMS · KARA · TAYLOR
consulting civil and structural engineers

PROJECT: FORT REGENT REDEVELOPMENT JERSEY SPORTS VILLAGE

DRAWN	SCALE	CAD FILENAME	DATE	CHECKED	STATUS
JW	1:200	s007.plt	JUNE 1999	JB	PRELIMINARY

TITLE	PROJECT No.	DRAWING No.	REVISION
VISITORS CENTRE GENERAL ARRANGEMENTS	1510	S007	P1

PLOT DATE 15 JUN 1999

REV DATE DESCRIPTION BY CHECKED

VISITORS' CENTRE
GENERAL ARRANGEMENT PLANS

saville jones | architects

SUMMARY OF ESTIMATED BUDGET COSTS

	£
PHASE 1	
Lifts, Access Walkway and Visitors' Centre from Snow Hill to the Fort	2,950,000
Heritage Attraction	550,000
PHASE 2	
Health & Fitness Suite	4,035,000
PHASE 3	
Gymnasium/Sports Hall and Changing	5,000,000
PHASE 4	
General Refurbishment - Parade Ground Level	685,000
PHASE 5	
Climbing Wall	355,000
PHASE 6	
Queens Hall	2,140,000
	£ 15,715,000

Notes:

1 Costings are based on Second Quarter 2000 prices, with an allowance for Jersey rates. No further allowance for fluctuations has been included.

2 Individual costings for phases should not be considered for omission in isolation as they are interrelated and could result in additional cost if continuity of each phase is not achieved.

3 The costings exclude the following:

- Professional and Statutory fees
- Demolition of Swimming Pool
- Conversion of Sea Cadets Accommodation
- Client's 'Fit out' (IT networking and equipment, telephone system, fitness stations, loose fittings and furniture, etc.

BUDGET COSTINGS
PHASE 1

LIFTS & WALKWAY FROM SNOW HILL TO FORT & VISITORS' CENTRE:	**£**		**£**
Substructures to Lift, plant Room and Kiosk	33,000		
Construction of Plant Room and Kiosk	22,000		
Precast concrete self finished encasement units &insitu filling & reinforcement to lifts with feature detail one side	87,000		
Preparation of rock face, anchor points & filling between lifts	33,000		
Plant housing & observation area at high level	49,000		
Conical towers at head of Lifts	38,000		
2no panoramic lifts (unenclosed shaft) inc. BWIC	815,000		1,077,000
Alternative with glass enclosure		1,227,000	
Walkway			
Substructures to steelwork	65,000		
Steelwork including treatment	125,000		
Oak flooring and joists	60,000		
Aluminium standing seam roof	38,000		
Single toughened glazing	81,000		
Ramps, steps, landings & balustrading	33,000		
Form opening in existing Fort cladding for Walkway entry	11,000		413,000
		c/f	**£1,490,000**

Engineering Services:	**£**		**£**
		b/f	1,490,000
Mechanical & Electrical Installations as reported by Jersey Energy	109,000		
BWIC Engineering Services	11,000		
Allowance for diversion of existing sewer within Snow Hill	109,000		229,000
			1,719,000
Allowance for Preliminaries & Contingencies			344,000
			2,063,000
Visitors' Centre:			
Substructure	38,000		
Steelwork including treatment	92,000		
Oak flooring & joists	43,000		
Aluminium standing seam roof sheeting	38,000		
Single toughened glazing	47,000		
Doors	11,000		
Internal arrangement	55,000		
Mechanical & Electrical Installations as reported by Jersey Energy	133,000		
BWIC Engineering Services	11,000		468,000
Allowance for Preliminaries & Contingencies			94,000
External Works:			
Clear existing buildings within East Ditch and form new hard landscaping for Car Parking			
Remove Cable Stations & form new soft landscaping area	206,000		
Landscape area	65,000		271,000
Allowance for Preliminaries & Contingencies			54,000
			£2,950,000

BUDGET COSTINGS
PHASE 2

HEALTH AND FITNESS SUITE	**£**	**£**
Demolitions	33,000	
New construction of fitness & aerobics areas staircases, reception area, etc	707,000	
New link bridge	65,000	
Allowance for acoustic screening	55,000	
New floor coverings to general central areas	27,000	
Plasterboard ceiling to underside steelwork	146,000	
Refurbishment & 'Fit-out' of existing area to form changing rooms, toilets, treatment rooms, spas, steam room and saunas	391,000	
Mechanical & electrical installations as reported by Jersey Energy	1,071,000	
BWIC Engineering services	82,000	
Proportion of refurbishment work at Rampart Level	783,000	3,360,000
Allowance for Preliminaries & Contingencies		675,000
		£4,035,000

BUDGET COSTINGS
PHASE 3

GYMNASIUM/SPORTS HALL	**£**	**£**
Demolitions	22,000	
New construction of Sports Hall, with provision of seating, stage and steps	1,218,000	
Allowance for acoustic screening	109,000	
Raised floor to gymnasium area	60,000	
Lift installation	44,000	
Refurbishment and 'fit out' of existing areas to form changing rooms, toilets, etc	218,000	
Redecoration of Club Rooms	16,000	
New floor coverings to general central areas	98,000	
Plasterboard ceiling to underside steelwork	180,000	
Mechanical and electrical installations as reported by Jersey Energy	1,283,000	
BWIC Engineering services	109,000	
External canopy	27,000	
Proportion of refurbishment work at rampart level	783,000	4,167,000
Allowance for Preliminaries & Contingencies		833,000
		£ 5,000,000

BUDGET COSTINGS
PHASE 4

GENERAL REFURBISHMENT: PARADE LEVEL:	**£**	**£**
Heritage Centre - General refit	55,000	
Seminar rooms, conference/catering, club rooms, staff rooms & stores generally - Redecoration only	104,000	
Reception/administration & toilets - refurbishment generally	174,000	
New floor covering to areas around Children's activities and kitchen	71,000	
Mechanical & Electrical installations as reported by Jersey Energy	152,000	
BWIC Engineering services	15,000	571,000
Allowance for Preliminaries & Contingencies		114,000
		£ 685,000

BUDGET COSTINGS
PHASE 5

CLIMBING WALL:	**£**
Construction of climbing wall	296,000
Allowance for Preliminaries and Contingencies	59,000
	£ 355,000

PHASE 6

QUEENS HALL:	**£**	**£**
New Construction of upper floor with steel framework, two layer plasterboard ceiling, plywood flooring & carpet, 2no. staircases	795,000	
Refurbishment & 'fit out' of existing toilets	45,000	
Minor refurbishment & redecoration of existing rooms and construction of new toilets	180,000	
New floor coverings to general central areas	71,000	
Refurbish existing lift	18,000	
Mechanical & electrical installations as reported by Jersey Energy	620,000	
BWIC Engineering services	55,000	1,784,000
Allowance for Preliminaries & contingencies		356,000
		£ 2,140,000

Copyright

March 2000.

Acknowledgement

The following Consultancies have assisted in the preparation of the design and the information contained within this document:

Structural Engineers - Adams Kara Taylor, London

Services Consultants - Jersey Energy, St Saviour

Quantity Surveyors - Alex Sayer Ltd, Bognor Regis.