



University of the Free State

South Campus



Report on assessment of accessibility of the
campus and various buildings for
people with disabilities.

October 2013

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The Campus

Nestled in the hills overlooking the vibrant township of Mangaung, Bloemfontein, lies the University of the Free State's South Campus. The campus was originally built in the 1980s as a satellite campus for Vista University. However, it was incorporated with the University of the Free State (UFS) in 2004 as part of the restructuring of the South African higher education system.

The facilities include an administration building, a library, lecture rooms and an indoor arena, which can accommodate up to 4 000 people. Ever since its incorporation, the UFS intended for the South Campus to play a meaningful role in the economy of the region and the upliftment of its people, as well as being the hub for distance learning programmes offered by the UFS.

One of the main roles of the campus is to draw new students from lower levels of education than previously possible, by widening and opening up access pathways at Further Education and Training (FET) and Higher Education (HE) levels. These young people need another year or two of study before they are ready to enter mainstream programmes. Even though these students have been let down by a dysfunctional school system, they go on to fulfil their potential and follow their dream careers as doctors, lawyers, or teachers, thanks to the extra year or two of study.

Another major function of the South Campus is to provide a base for the more than 6 000 students who are studying via distance education. These students are not able to study on campus due to geographical or economic reasons, or they might work full-time and have to complete their degrees on a part-time basis. It is mainly owing to these distance-teaching students that the South Campus is experiencing the fastest growth at the UFS. On-campus students receive intensive small-group instruction, which has been proven to be a highly successful method of instruction. Distance education takes place online and through broadcasting mediums.

The Project

Typology Architects and Incline Architects was appointed to do an assessment and prepare construction documentation for this project which basically entails the following :

- 1 Accessibility and ablution facilities of the campus and various buildings for people with disabilities

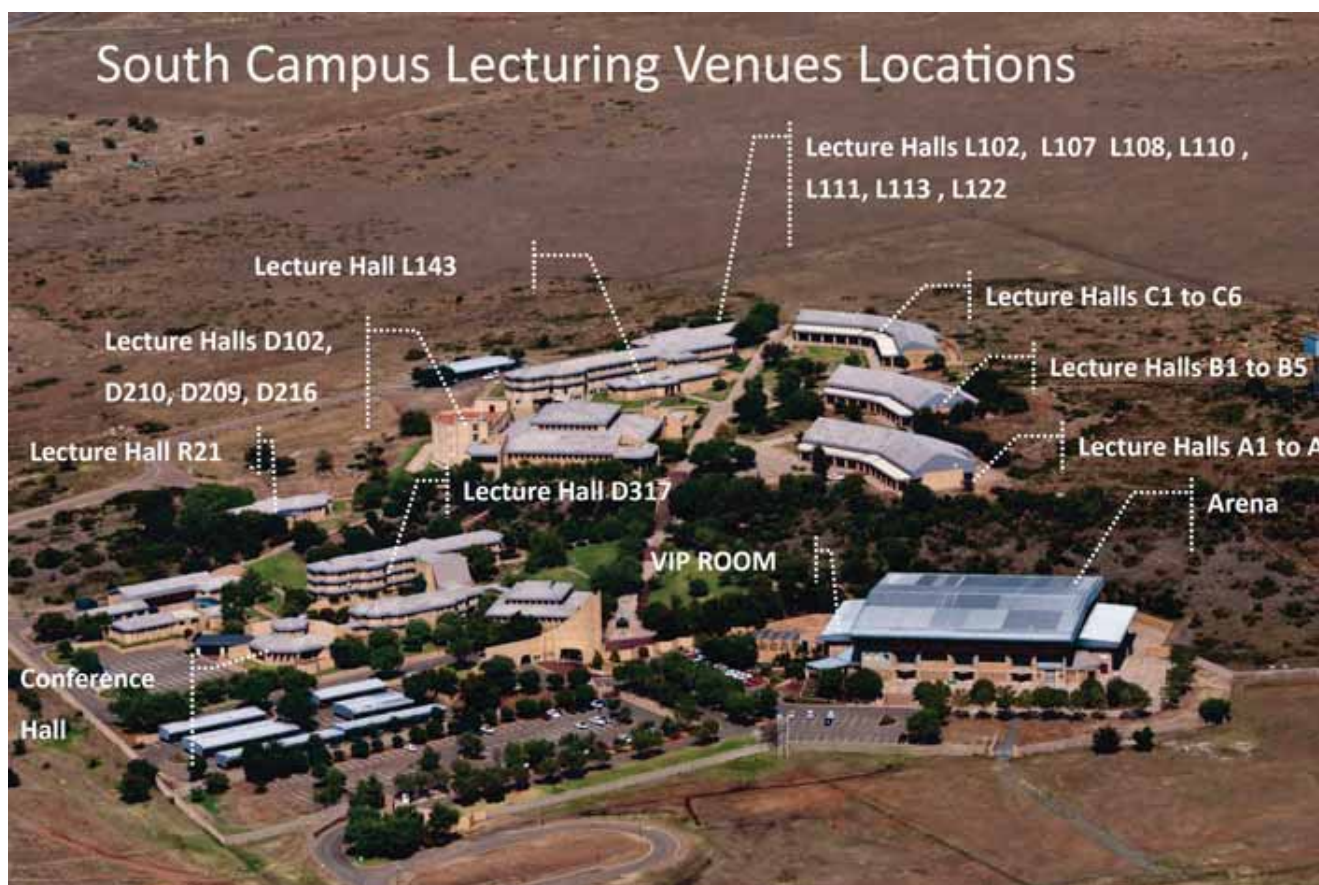
The campus was visited on several occasions to assess and take photographs and talk to the students to determine what the needs and hot-spots are regarding accessibility for students with disabilities to various buildings. These have been compiled in comprehensive documentation drawings for construction and it is included as the framework for this report. The tender for construction work has been awarded and we anticipate that the contractor will be on site by the time this report reach the DHET.

AERIAL VIEW OF CAMPUS



- 01A MAIN ENTRANCE BUILDING
- 01B REGISTRATION HALL
- 01C ADMINISTRATION
- 01D CONFERENCE HALL
- 02A LECTURE HALL A
- 02B LECTURE HALL B
- 02C LECTURE HALL C
- 03. LIBRARY
- 04. TECHNICAL SERVICES
- 05A EDUCATION LABS
- 05B GEOGRAPHY LABS
- 06. ARENA
- 07. SCHOOL OF CONTINUING EDUCATION
- 08. GATEHOUSE





CAMPUS LAY-OUT



Existing Buildings





New Buildings/Structures currently in planning, proposal and construction phases.

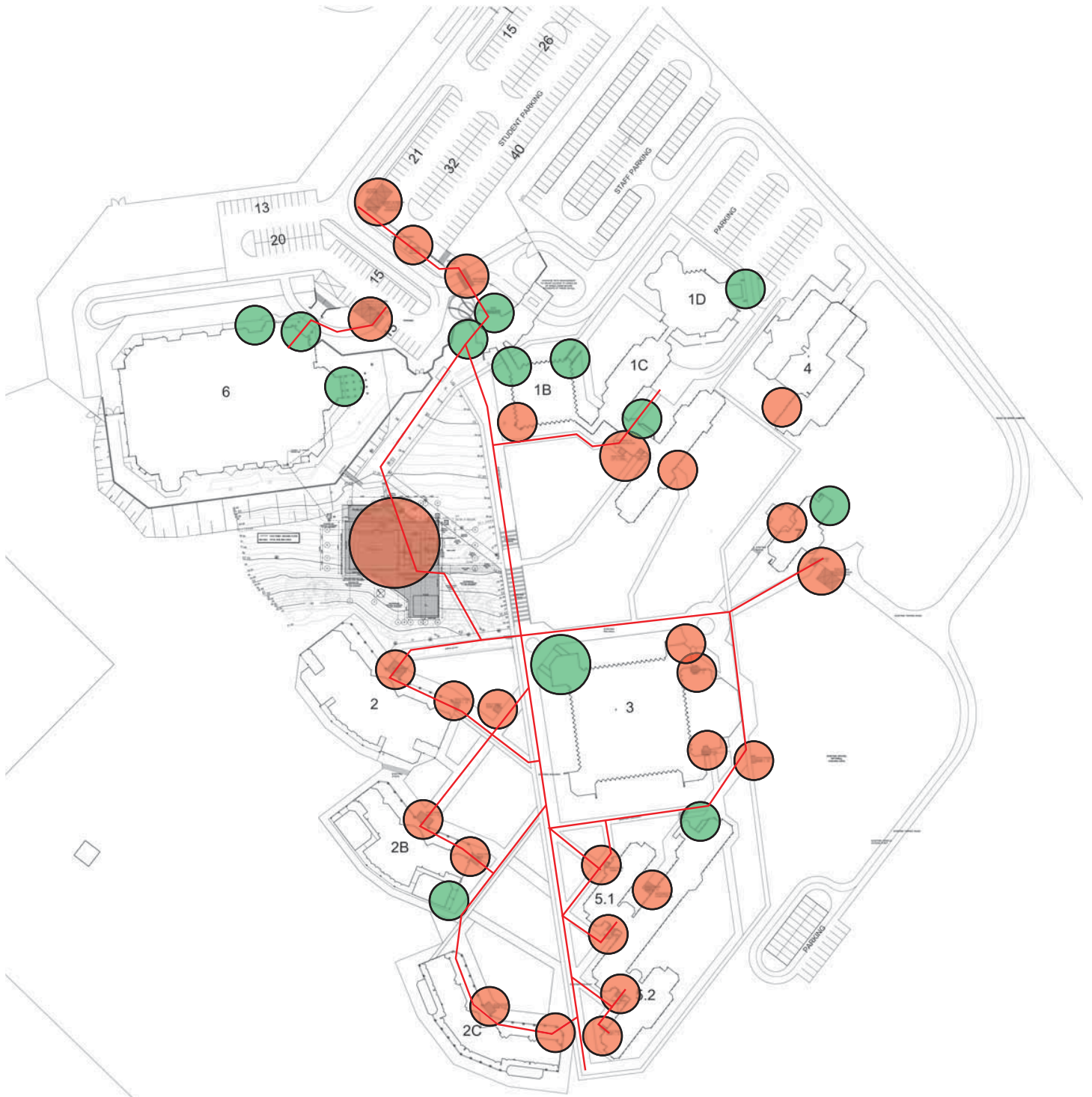


Main Pedestrian routes



ACCESSIBILITY HOT-SPOTS

-  Access point/door currently readily accessible to students and staff with disabilities.
-  Access point/door not currently accessible to students and staff with disabilities. These items are included in project documentation for construction.



MAIN ENTRANCE BUILDING

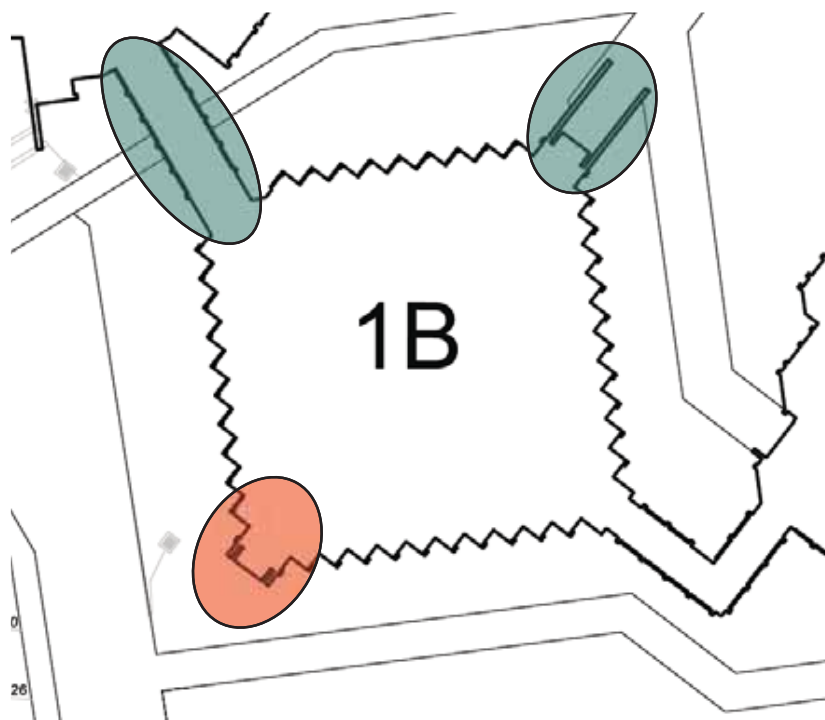
The Main Entrance Building is a single-storey building with several offices and amenities. The building's main entrance is on the north side. This entrance doorway has no raised threshold and is of sufficient width and inclination to be traversed by a wheelchair without being pushed by a helper. The turnstiles inside the entrance is also of a design that accommodates the passing of a wheelchair. No construction work here is necessary.

Some alterations to the parking area and pathway from the parking area, over the road to the Main Entrance is necessary as indicated on the plan.



REGISTRATION HALL

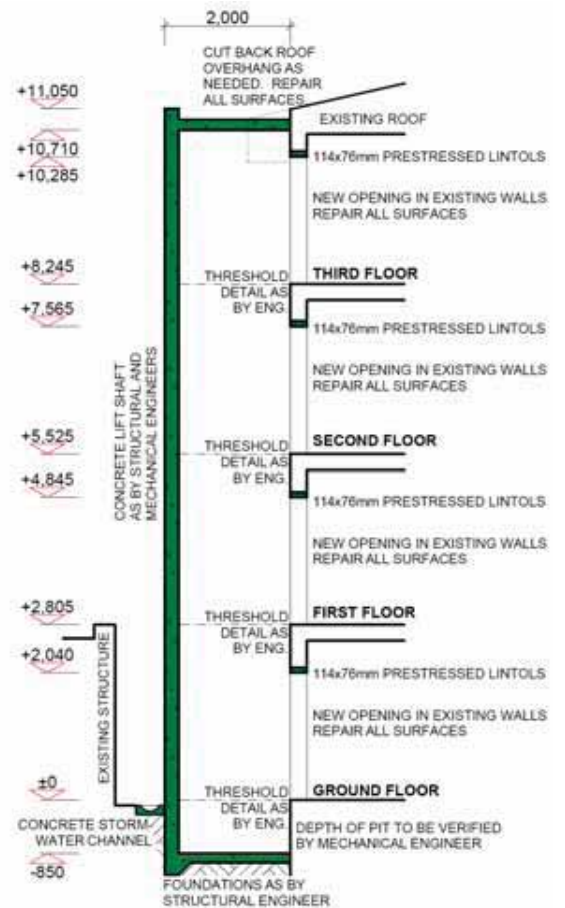
The Registration Hall is a two-storey multi-purpose hall building with administration areas for registration of students and related activities. The building's main entrances is via a sloped enclosed walkway from the Main Entrance Building. This walkway has no raised thresholds and is of sufficient width and inclination to be traversed by a wheelchair without being pushed by a helper. The other accesses are not frequented by students on a regular basis. No construction work here is necessary.



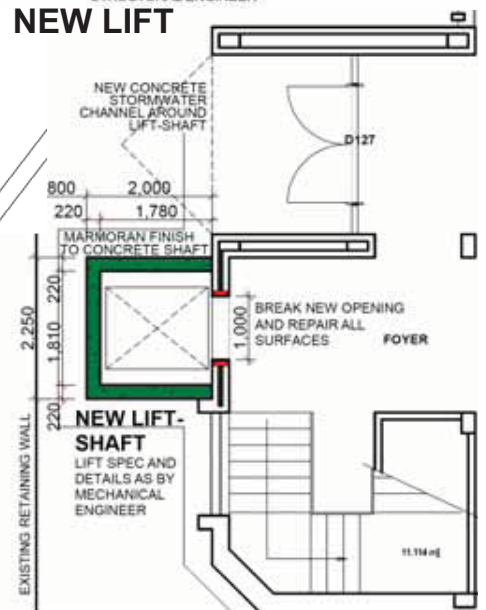
ADMINISTRATION BUILDING

The Administration Building is a four-storey office- building with a central courtyard. The building’s main entrance is on the east and west sides as indicated. These entrance doorways has no raised threshold and is of sufficient width and inclination to be traversed by a wheelchair without being pushed by a helper. No construction work here is necessary. To reach the top three floors a new 4-stop lift will be constructed and installed as part of the construction contract. This lift will be of sufficient size to accommodate at least a wheelchair and another person. **All floors of this building will be accessible after completion of the lift-installation.**

A new paved ramp to 1:12 inclination will be built at a Western entrance door on First floor level as indicated.



SECTION : NEW LIFT

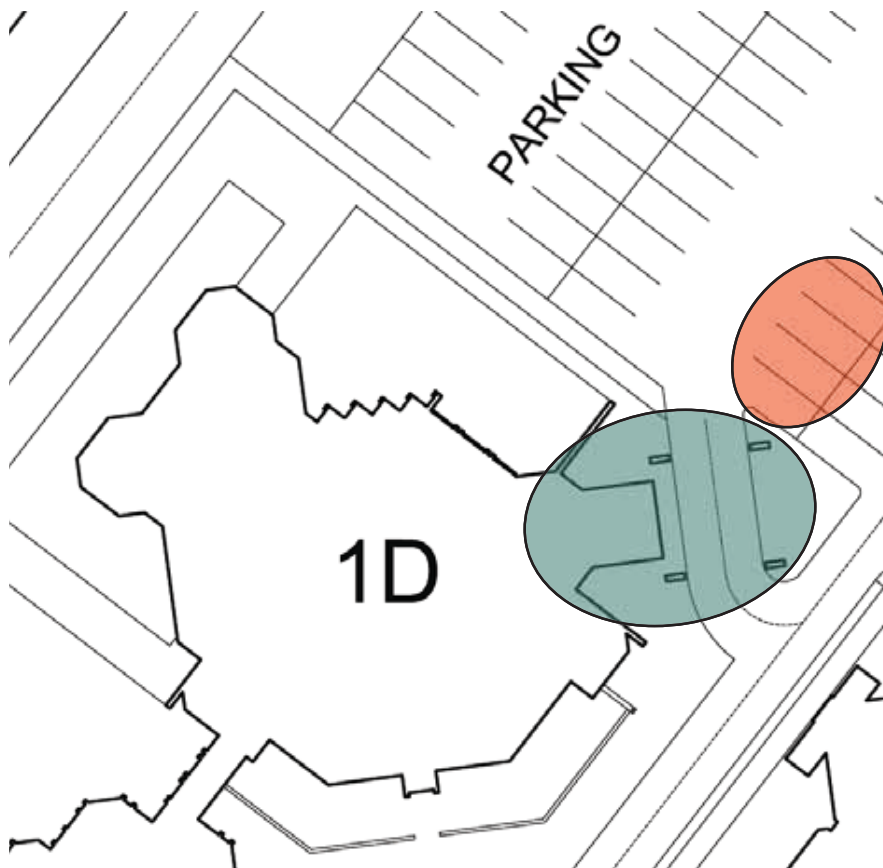


PLAN : NEW LIFT

CONFERENCE HALL

The Conference Hall is a single-storey multi-function hall venue with a porte-cochere type entrance on the eastern side off the parking area. These entrance doorways has no raised threshold and is of sufficient width and inclination to be traversed by a wheelchair without being pushed by a helper. No construction work here is necessary.

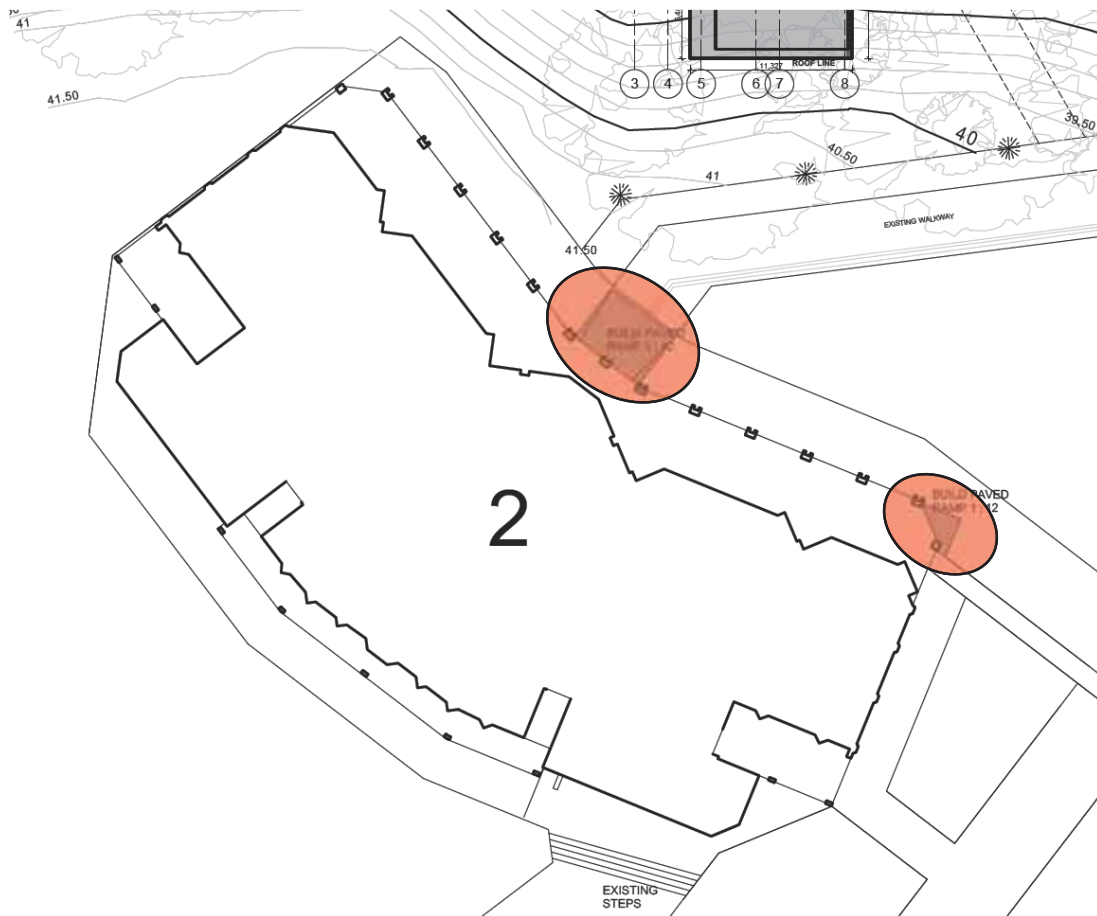
Three close-by parking bays will have to be converted to 2x disabled parking bays.



LECTURE HALL A

Lecture Hall A is a single-storey building with several theatre-type lecture halls. The building is bordered by a covered porch on the eastern side. The entrance doors to the lecture halls has no raised threshold and is of sufficient width and inclination to be traversed by a wheelchair without being pushed by a helper. No construction work here is necessary. However, the porches are inaccessible from the surrounding walkway levels and paved ramps will be built to comply with regulations.

This construction work will ensure accessibility to the lower level of all lecture halls in this building.



LECTURE HALL B

Lecture Hall B is a single-storey building with several theatre-type lecture halls. The building is bordered by a covered porch on the eastern side. The entrance doors to the lecture halls has no raised threshold and is of sufficient width and inclination to be traversed by a wheelchair without being pushed by a helper. No construction work here is necessary. However, the porches are inaccessible from the surrounding walkway levels and paved ramps will be built to comply with regulations.

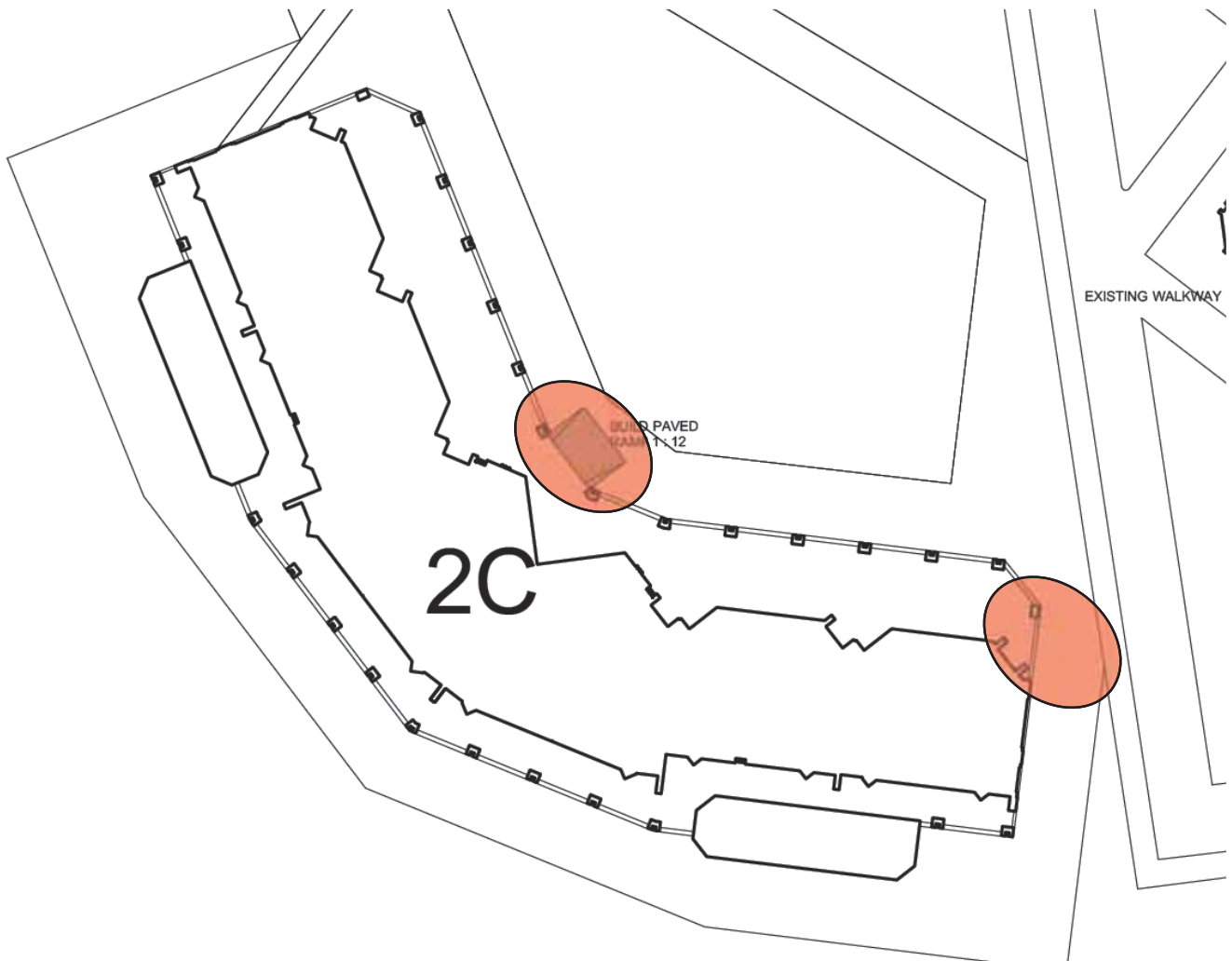
This construction work will ensure accessibility to the lower level of all lecture halls in this building.



LECTURE HALL C

Lecture Hall C is a single-storey building with several theatre-type lecture halls. The building is bordered by a covered porch on the eastern side. The entrance doors to the lecture halls has no raised threshold and is of sufficient width and inclination to be traversed by a wheelchair without being pushed by a helper. No construction work here is necessary. However, the porches are inaccessible from the surrounding walkway levels and paved ramps will be built to comply with regulations.

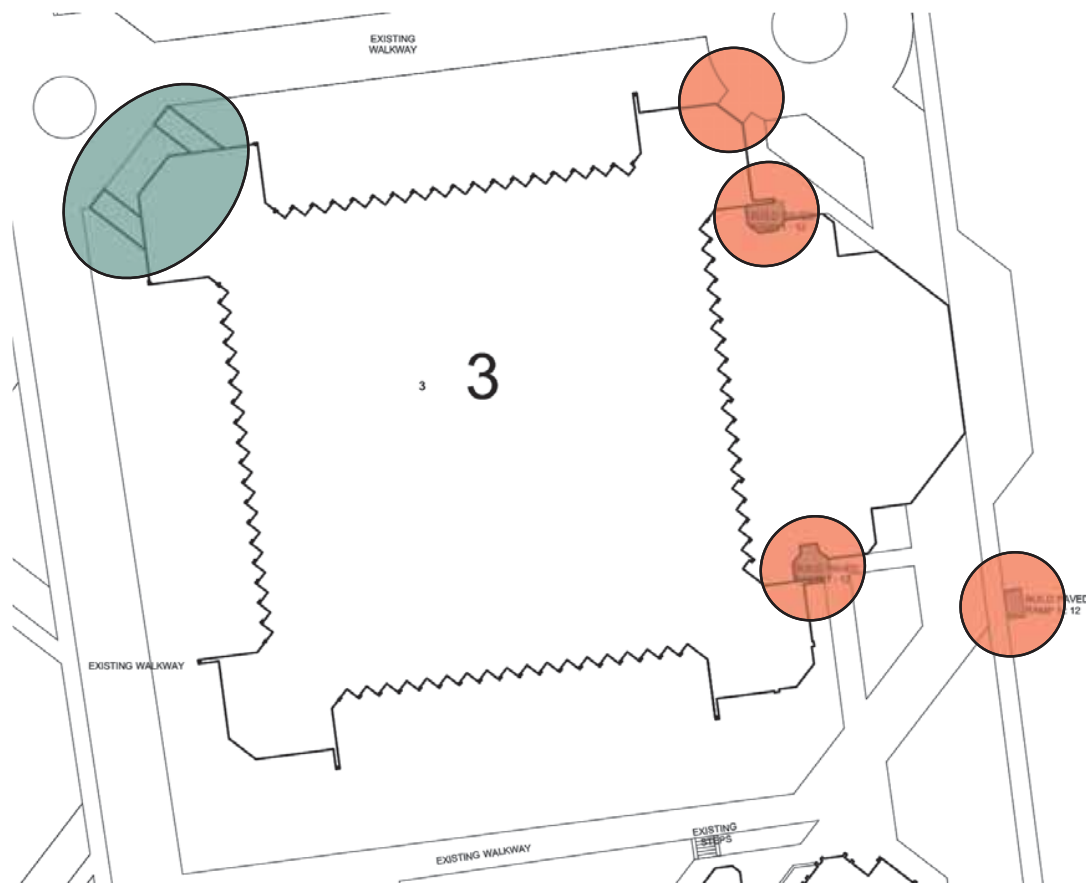
This construction work will ensure accessibility to the lower level of all lecture halls in this building.



The Library is a two-storey building with all major services, functions and amenities located on the Ground floor and a computer study area on a First floor mezzanine level. During a previous project, a couple of computer equipped workstations were provided on the Ground floor specifically for students with disabilities' use. Therefore there currently is no necessity to install additional mechanical vertical circulation.

The Main entrance is on the north-western side of the building. These entrance doors has no raised threshold and is of sufficient width and inclination to be traversed by a wheelchair without being pushed by a helper. No construction work here is necessary.

At the eastern side of the building is two more secondary entrances to academic services. These entrance doors has raised thresholds and is currently inaccessible for students with disabilities. The building of paved ramps to comply with regulations is included in the construction documentation.



The Technical Services building is a single-storey building adjacent to the Conference Hall consisting of offices and workshops for maintenance personnel and supporting technical services to the campus. No entrance to the building, except the workshops, is currently accessible for persons with disabilities. The entrance to the offices section will be addressed as part of the project.



The Education and -Laboratories section of this building is a three-storey building with lecture rooms, laboratories and offices on different levels. The building has several entrances on alternating levels providing access to the Ground- and First floors. The Second floor is currently inaccessible for people with disabilities and mechanical vertical circulation will have to be provided. However, access to the Second floor has currently not been prioritised as part of construction documentation for this project.

Three major entrances will have to be provided with paved ramps to comply with regulations. These are included in the construction documentation for this project.

Access to one of the Ground floor computer laboratories is of sufficient width and inclination to be traversed by a wheelchair without assistance. No construction work here is necessary.



The Geography and -Laboratories section of this building is a two-storey building with lecture rooms, laboratories and offices on different levels. The building has two entrances providing access to the Ground floor lecture rooms. The First floor flows concurrently with the Education section of the building's Second Floor and is currently inaccessible for people with disabilities and mechanical vertical circulation will have to be provided. However, access to the First floor of this portion of this building will now be the only portion of the campus that is not easily accessible for persons with disabilities.

Two major entrances will have to be provided with paved ramps to comply with regulations. These are included in the construction documentation for this project.

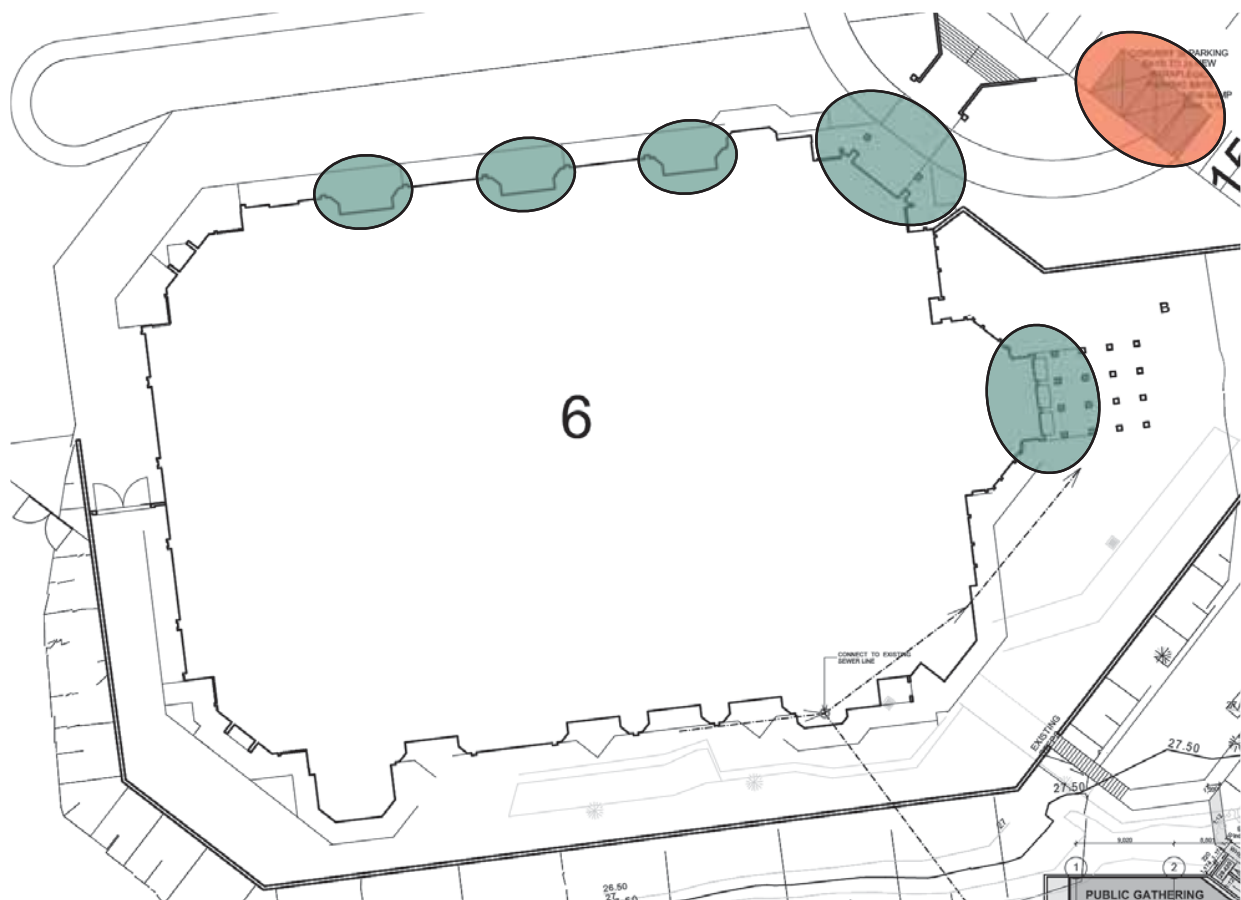


ARENA

The Indoor Arena housing approximately 4000 people is located outside of the access controlled entrance to the campus. This enables it to be used for functions and events that is not University-related as well. This is a two-storey building with all major entrances, facilities and services located on the Ground floor. The campus Cafeteria is also located on the Ground floor of the Arena and is accessed from the Campus side of the fence wall.

The main entrance to the Arena and the Cafeteria is on the east side of the building. These entrance doorways has no raised threshold and is of sufficient width and inclination to be traversed by a wheelchair without being pushed by a helper. No construction work here is necessary.

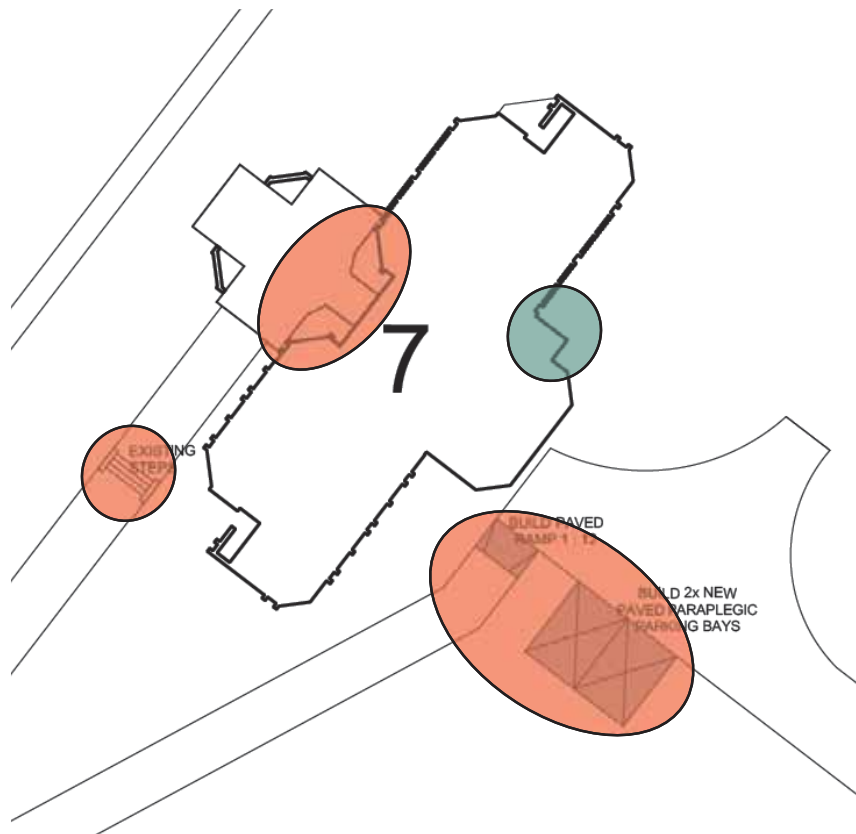
Three parking bays will have to be converted to two paraplegic parking bays and provided with a access ramp to comply with regulations. This forms part of the construction documentation.



The existing Annex Building used by the School of Continuing Education is a single-storey building with offices and supporting academic services. The main entrance to the building is on the northern side and has a raised threshold. This entrance doorway is currently inaccessible for people with disabilities without some assistance. It will have to be provided with 2x paved ramps to comply with regulations. These are included in the construction documentation for this project.

The building does include a toilet facility for people with disabilities on the south side that is accessible for a wheelchair without assistance.

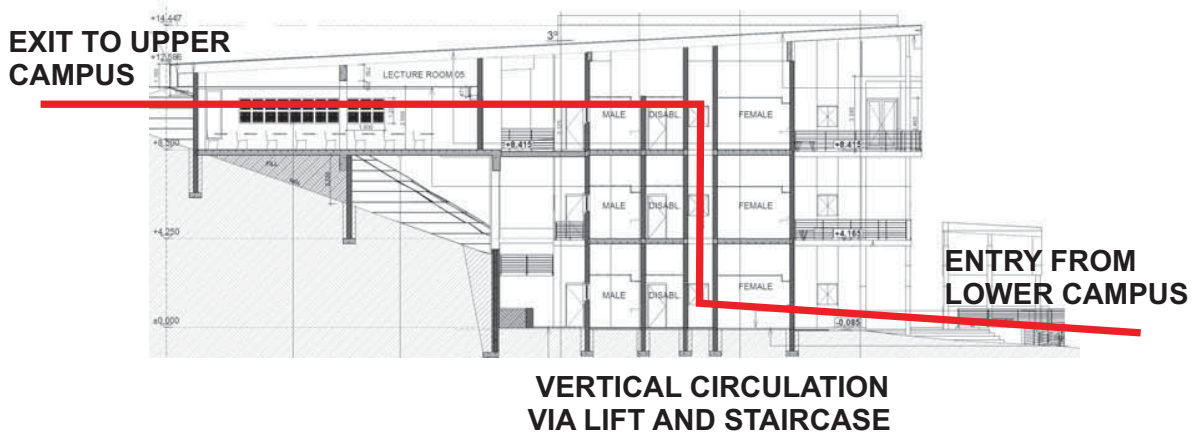
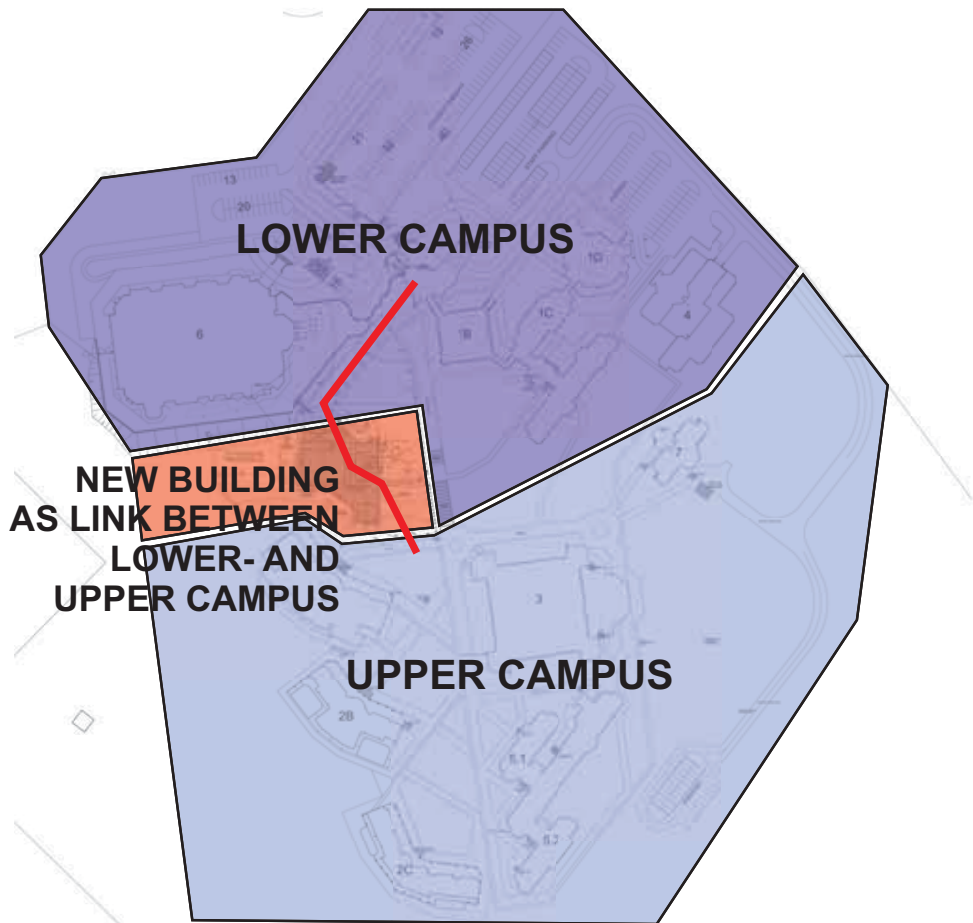
It is proposed that two paraplegic accessible parking bays is constructed at the back of this building to provide accessibility of this part of the upper campus to people with disabilities. This forms part of construction documentation for this project and includes a ramp to access the existing walkway from the road level.



NEW LECTURE HALLS BUILDING

One of the major problems with accessibility on the South Campus is the steeply sloped site that creates a divide between the lower and upper campus. The central paved walkway contains a double flight of stairs that can only be traversed by able-bodied persons. Therefore a method was needed to create a easily accessible vertical link between the lower- and upper parts of the campus.

This requirement together with the need for additional lecture halls, resulted in the solution of designing a lecture halls building as a vehicle for vertical pedestrian flow and academic facility. A site was identified between the Arena and Lecture Halls 2A that would be ideal to utilize for this purpose.

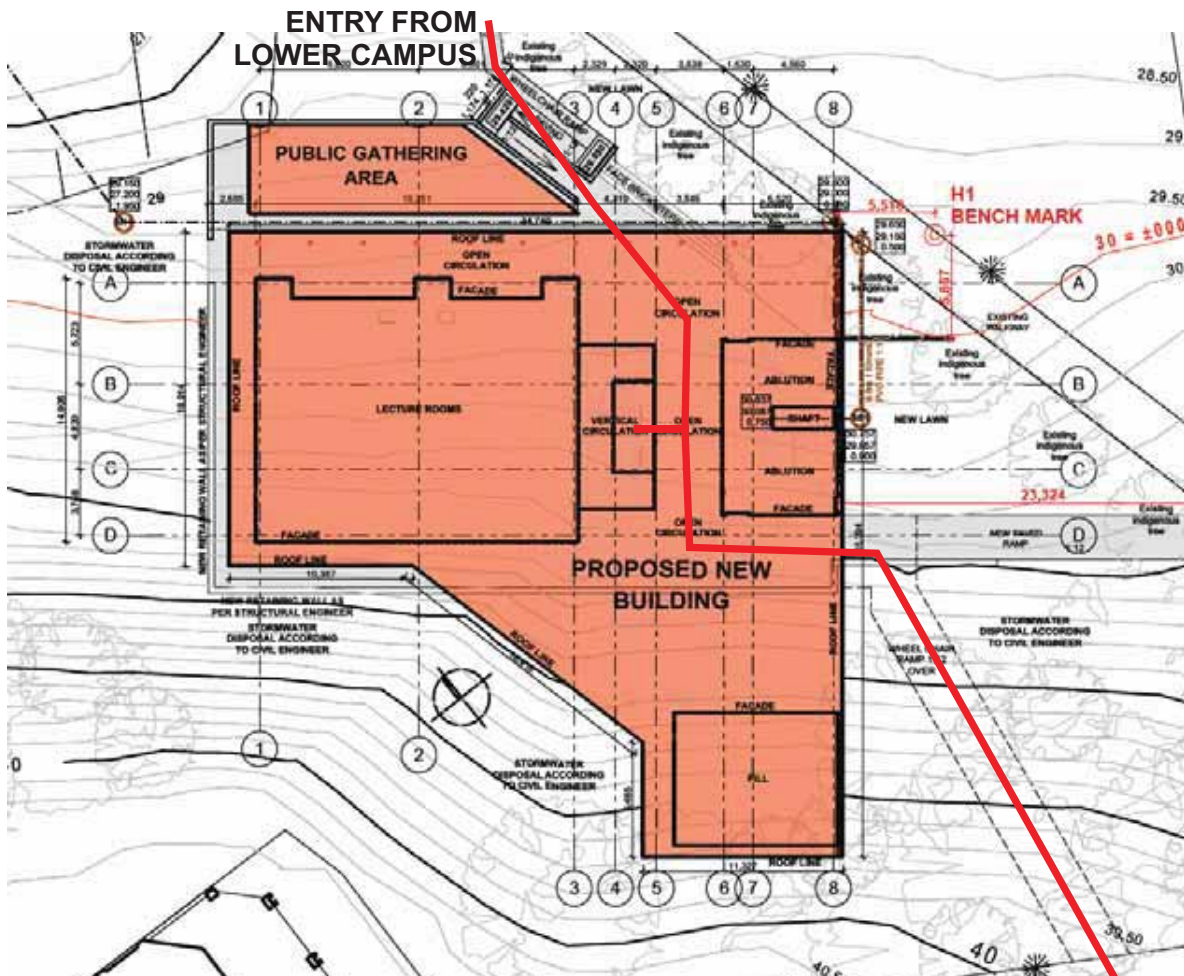


NEW LECTURE HALLS BUILDING

The new planned Lecture Halls building will be a three-storey building with 5x lecture halls and a computer laboratory and a central lift and staircase. This lift's main objective is to provide a vertical link between the lower campus and the upper campus. This lift will aid in the ease of pedestrian flow for people with disabilities, able-bodied students and staff alike.

The building will provide ablution facilities for people with disabilities on all three floors.

Construction is estimated to be finished by the end of 2014.



ARCHITECT'S RENDERING

EXIT TO UPPER CAMPUS

Wayfinding entails a person's spatial orientation where the user is actively using the space.

Spatial orientation requires the user to form an overall mental *image of the layout of his environment*, known as a *cognitive map*. Cognitive mapping is the ability to visualize a map but does not imply that the user is actively using the space. Wayfinding uses the cognitive mapping process to solve location-based problems and enhances the identification of users within their spatial position.




The process of identification promotes the user's feeling of ownership of and responsibility for the campus.

Wayfinding (actively changing map, diagrams, signage, information boards etc.) is a dynamic relationship to the space. It is dynamic in that people's movement with their direct sense of orientation to place must be accommodated. Wayfinding, in general, is lacking on the UFS South campus and needs to be addressed. Further, the differently labeled accesses on campus are often separated from the abled-bodied entrances, leading to two different spatial orientations. The separation contributes to the differently labeled user's inability to identify with the campus. This report and the corresponding construction documentation aims to address the issue of different accesses for people with disabilities and able-bodied students and staff.

Wayfinding on the campus is currently being addressed for all users through a **universal signage and information system** as part of a separate project that is being developed.

*Information adapted from: **Huelat, B.J.** 2007. *Wayfinding: Design for Understanding. A Position Paper for the Environmental Standards Council of The Center for Health Design.**

PARKING FOR DRIVERS WITH DISABILITIES

-  Existing tarred parking areas
-  Existing informal gravel parking area
-  Proposed parking bay positions for disabled drivers to be established if not already indicated



Please see engineer's report on next pages.

Our Ref: Persons with disabilities.001cdj



14 October 2013

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For the attention of Mr L Delpont

Dear Sir

PARKING FOR PERSONS WITH DISABILITIES ON THE SOUTH CAMPUS OF THE UNIVERSITY OF THE FREE STATE

Accessibility for persons with disabilities, making use of motor vehicles on campus refers.

On the road, persons with physical impairments operate vehicles within the exact same environment as able bodied persons. They are subjected to exactly the same rules, regulations and visual environment. Hence, the University of the Free State's Guidance System and Operational Guidelines, compiled by GIBB, make full provision for all road users. Way finding is also included in the Guidance System. Once parked, the disembarking from a motor vehicle, moving to a building and moving within a building requires special attention to accommodate wheelchairs.

There is no clear design guideline to use to determine the exact number and position of parking for persons with disabilities. The main considerations for parking are:

- Close proximity for persons with walking impairments
- Size of parking bays for persons with wheelchairs
- No other impairments are relevant to this study.

Notable requirements from the National Building Regulations SANS 10400S are:

- Signs should not be less than 2m above driveway level.
- Only one parking bay per person with disabilities shall be provided for employees.
- Where more than 50 parking bays are provided for a specific building at least one parking bay per 25 parking bays provided shall be provided for vehicles used by persons with disabilities.
- The dimensions and gradients for such parking bays are provided and should comply with the Southern Africa Development Community Road Traffic Signs Manual (SADC RTSM)
- The parking bays each provided should be within 50m from the accessible entrance of each building.
- Such parking bays shall be properly demarcated with relevant vertical signs and road painted markings.
- A vertical clearance of 2.4m is specified.



GIBB Holdings Reg: 2002/019792/02
Directors: R. Vries (Chairman), Y. Frizlar, B. Hendricks, M. Mayat
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A list of divisional directors is available from the company secretary.



The National Guidelines on Parking for Persons with Disabilities basically endorse the SANS 10400S requirements, but is more specific on quantifying the number of parking bays required.

Currently, there are about 365 formal parking bays provided on this campus. In the proposed layout for parking for drivers with disabilities a total of 10 parking bays are demarcated for persons with disabilities. The requirement in terms of the National Guidelines is 8 parking bays. These parking bays are conveniently located, relative to the various access points to the pedestrian routes.

Based on the information above it can be concluded that this campus is accessible for persons with disabilities, making use of motor vehicles.

Yours faithfully
for GIBB (Pty) Ltd

A handwritten signature in black ink, appearing to read 'C F de Wet', with a small dot at the end.

C F de Wet PrEng
Technical Executive

In accordance with its vision to be a university that is recognised across the world for excellence in academic achievement and in human reconciliation, the University of the Free State is committed to provide a universally accessible environment to all students, staff and visitors to all three campuses of the university. To create an accessible environment that is conducive and welcoming to everybody on campuses that were not designed with accessibility in mind, is not an easy task. When the principles of universal design and access are applied, the environment and spaces can be enjoyed by all users alike, creating a sense of belonging and togetherness. The common perception that accessibility only provides equitable access and opportunities for persons in wheelchairs is refuted by universal access, stating that is to the advantage and for the use of everybody. Parents with infants in strollers, delivery persons with trollies or carrying heavy material, library patrons carrying an armful of books, academic staff with wheeled (rolling) laptop bags and older people all benefit from the availability of a ramp, elevator or automated door.

The current accessibility project of the UFS was initiated in 2009, evaluating the accessibility status of the UFS at the time. Priority inaccessible areas and spaces were identified and listed to be converted and improved over a period of 5 years, revising the list every year. The focus of the project has primarily been on areas and spaces where most student activities take place, where specific needs and challenges have been identified and where specific departments/divisions of the UFS has requested the improvement of access. The project does not only include access to buildings but also accessible bathrooms, sufficient accessible parking spaces, accessible walkways and also accessibility within the classroom. The emphasis of the project is not only on wheelchair users and persons with mobility impairments but to create an environment that can easily be navigated and used by everybody.

Hetsie Veitch

Assistant Director : Student Affairs
University of the Free State

Extracts from the regulations in the newly published **SANS 10400-S : 2011**

4.3 Parking

4.3.1 For employee parking, at least one parking space shall be accessible for persons with disabilities.

4.3.2 In addition to the requirement of 4.3.1, where provision has been made within a building, or on the site on which such building is erected, for the parking of more than 50 motor vehicles,

- a) at least one parking space per 25 parking spaces (or part thereof) and at least 20 % of the parking spaces at rehabilitation and medical facilities shall be provided for parking of vehicles used by persons with disabilities;
- b) the parking spaces provided for vehicles used by persons with disabilities shall be of a suitable length, shall be at least of the dimensions shown in figure 2, and shall be situated on and accessed from a surface that is not steeper than 1:50;
- c) any parking space provided for vehicles used by persons with disabilities shall be located within 50 m of an accessible entrance;
- d) any parking space provided for vehicles used by persons with disabilities shall be clearly demarcated as being intended for the use of persons with disabilities only;
- e) entry and routing to any parking space designated for persons with disabilities shall be provided with a clear height of at least 2,4 m and shall allow for the entry of vehicles suitable for use by wheelchair users, particularly those that have a hoist to carry the wheelchair on top of the car.

4.3.3 Parking spaces shall be identified by a vertical sign incorporating the international symbol for access by persons with disabilities, in accordance with 4.2. The international symbol shall also be clearly painted on the road surface (see figure 2) and it shall be 1 000 mm × 1 000 mm.

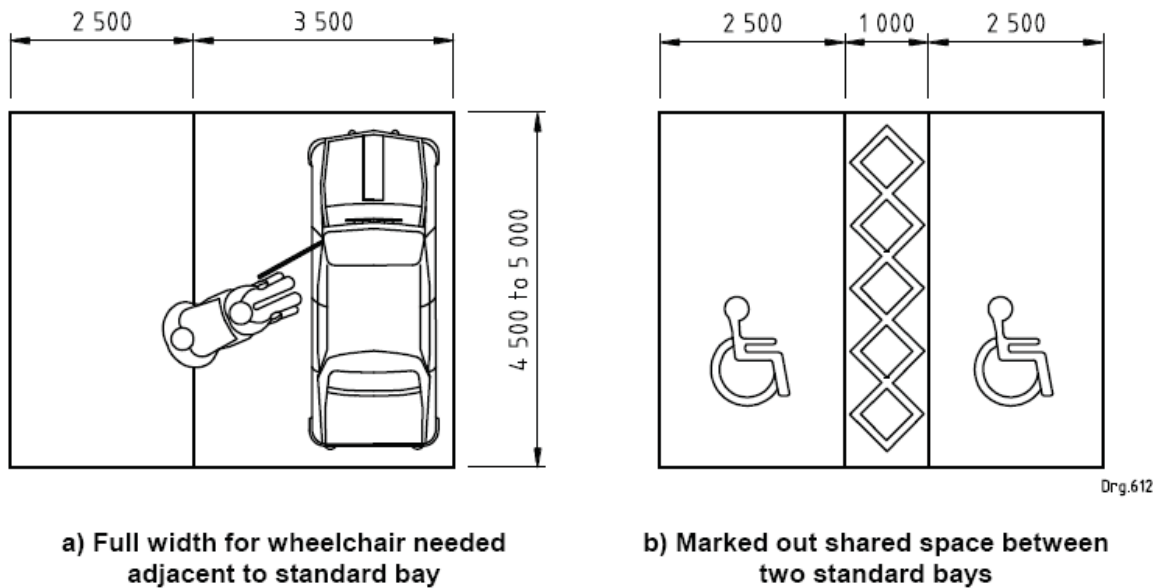


Figure 2 — Accessible parking bays

4.4 External and internal circulation

4.4.1 General

4.4.1.1 An accessible route shall form part of an external and internal circulation route.

NOTE The space allowances of this part of SANS 10400 should accommodate the use of self-propelled wheelchairs. The minimum dimensions might need to be increased to accommodate the full range of different types of wheelchair.

4.4.1.2 At least one accessible route shall be provided within the boundary of the site from all public transportation stops, accessible parking spaces, passenger loading zones and public streets and pavements to the accessible building entrance which they serve and the facilities inside the building.

4.4.1.3 There shall be a means of access suitable for use by persons with disabilities from the outside of the building to the ground storey.

4.4.1.4 The clear width of the walking surfaces shall not be less than 900 mm (such as between bollards in parking areas, or between planters and seating) and shall not be reduced by protruding objects. If the clear width is less than 1,5 m, an accessible route shall be provided with passing spaces of 1,5 m × 1,5 m (minimum) at intervals not exceeding 5,0 m, or an intersection of two walking surfaces which provide a T-shaped space.

4.4.1.5 Each accessible entrance to a building shall have at least one door or doorway in accordance with the requirements of 4.6.1.

4.4.1.6 Revolving doors, revolving gates and turnstiles shall not form part of an accessible route.

4.4.1.7 Pause areas, with suitable seating, shall be provided adjacent to an accessible route at intervals that do not exceed 25 m.

4.4.2 Turning spaces

4.4.2.1 The turning space allowance, e.g. for a wheelchair, guide dog or person on crutches, shall be a minimum of 1,5 m in diameter, inclusive of any toe and knee clearances.

4.4.2.2 Doors shall not be permitted to swing into the turning spaces.

4.4.3 Obstructions in the path of travel

4.4.3.1 Protruding objects shall not reduce the clear width required for accessible routes.

4.4.3.2 Hanging signs, lights, awnings and objects that protrude into circulation spaces shall have a clearance of at least 2 m above the trafficable surface.

4.4.3.3 Windows and doors shall not open across a walkway, corridor, stair or ramp. Doorstops shall be so positioned that any door will open to its maximum, and that they will not create a hazard.

4.4.3.4 Wall-mounted fire extinguishers, hose reels, telephones, litter bins and any other wall-mounted fittings shall

a) be designed to be easily seen,

b) be shielded or recessed to prevent injuries, and

c) be accompanied by a feature that warns of the presence of the potential hazard and that is possible to detect by a person using a white cane or stick.

4.4.3.5 A dished channel shall not be constructed within the boundaries of a path.

4.4.3.6 A drainage grating that is within the boundaries of a path shall be set flush with the surface of the path. Such grating shall be placed so that its longitudinal elements are perpendicular to the main walking direction, and the gap between them shall not exceed 13 mm.

4.4.3.7 Where identified parking for persons with disabilities is provided, a kerb cut that has a slip-resistant finish and gradient that does not exceed 1:12 shall be provided immediately adjacent to the bay (see figure 3).

NOTE 1 Kerb cuts should be provided where required, and in conjunction with pedestrian crossings, taxi and bus ranks and parking garages.

NOTE 2 The recommended surface between a pavement and roadway is a ramp fitted with tactile guidance surface indicators. This provides a safe and trafficable surface for wheelchair users, and a detectable surface to indicate to persons with visual impairments that they are leaving a pedestrian footpath and entering a traffic roadway.

4.7 Changes in level

4.7.1 In trafficable areas for public use, any changes in level shall comply with the requirements of SANS 10400-D, and with the requirements given in 4.7.2 and 4.7.3.

4.7.2 A raised kerb, not less than 75 mm high, or a skirting rail not more than 300 mm high, measured vertically above the surface, shall be provided on exposed sides of any ramp, stairway, balcony or any similar area where a change in level occurs.

4.7.3 Where a change in level of more than 600 mm occurs, a handrail shall also be provided.

4.8 Ramps

NOTE 1 Ramps might be required for use by persons without disabilities, for example, persons pushing trolleys who require ramps as an alternative to stepped access.

NOTE 2 Ramps should only be provided where level access cannot be achieved. Where a ramp is provided, stepped access should normally accompany it for persons with ambulant disabilities who find ramps difficult to use.

4.8.1 Any ramp or series of ramps shall provide a safe, comfortable and convenient route for wheelchair users.

4.8.2 Any ramp provided in terms of this part of SANS 10400 shall

- a) have a gradient, measured along the centre line, that is not steeper than 1:12 ;
- b) have a clear, trafficable surface not less than 1 100 m wide;
- c) have a surface in accordance with 4.5;
- d) have a landing at the top and bottom of each ramp of not less than 1,2 m in length (clear of any door swing) and of width not less than that of the ramp;
- e) comply with the requirements between landings as given in table 2 and figure 11;
- f) have a handrail on both sides of the ramp or, where the width is greater than 2,4 m, a central handrail in accordance with the requirements of 4.10 where the gradient is steeper than 1:15;
- g) where ramps in the same direction are used for a vertical rise of more than 600 mm, be staggered by the width of the ramp, in order to prevent a long straight line of ramps (see also 4.8.2(d)).

NOTE Where the total rise contemplated for a series of ramps is greater than 2 m, consideration should be given to alternative means of vertical circulation.

4.10 Handrails

The design and construction of handrails shall be in accordance with the following:

- a) handrails shall have an elliptical gripping surface profile that is approximately 50 mm wide and 40 mm deep, or a circular profile of diameter not less than 35 mm and not more than 50 mm;
- b) the height to the top of a handrail from the nosing of the tread of the stairs or from the surfaces of a ramp shall be in the range 900 mm to 1 000 mm and shall remain consistent along the length;
- c) handrails shall be securely fixed and shall be rigid;
- d) the surface of the handrail and wall, or any other surface adjacent to them, shall be free of any sharp or abrasive elements;
- e) the clear width between a handrail and an adjacent wall shall be at least 60 mm;
- f) handrails shall extend 300 mm horizontally beyond the top and bottom of the ramp or stairway (see figure 12 and shall return to the supporting structure or shall be finished with a positive return, and the minimum dimensions for landings on escape routes as required in SANS 10400-T shall be maintained;
- g) handrails shall be continuous between landings where this does not create a hazard;
- h) handrails shall be supported centrally from below with not less than 50 mm between the underside of the handrail and the top of the support;
- i) where a stairway is wider than 2,4 m, a handrail shall be provided at no more than 2,4 m intervals.

NOTE Handrails that extend at the top and bottom of a stairway are a tactile aid for persons with visual impairments, and a balancing aid for ambulant persons with disabilities.

4.11 Lifts

4.11.1 Lifts include passenger lifts and through-floor lifts, where

- a) passenger lifts serve all the storeys of the building that can be accessed by the stairway, and
- b) through-floor lifts may be used to serve a partial storey (see SANS 10400-A) of area greater than 100 m².

NOTE A through-floor lift can be used in small buildings, as an alternative to a passenger lift.

4.11.2 Passenger lifts shall

- a) have a minimum internal dimension of 1,1 m in width and 1,4 m in depth, clear of surface finishes;
- b) have a doorway with an unobstructed width of not less than 800 mm;
- c) be fitted with horizontal handrails the full length of the lift car sides at a height of between 850 mm and 1 000 mm above the floor level of the lift;
- d) have a mirror on the top half of the rear wall equal to the width of the lift to enable wheelchair users to back out of the lift where the lift has internal dimensions less than 1,5 m in width and 2,0 m in depth;
- e) have a clear circulation space of not less than 1,5 m × 1,5 m at the entrance of the lift on each floor;
- f) have audible and visible warnings in the lift lobby and lift car to indicate the lift car approaching, the arrival of the lift, the lift doors opening, the lift doors closing, the floor requested and at which floor the lift stops;
- g) have control buttons, including emergency control buttons, that are in accordance with 4.14;
- h) have illuminance on the control panel that is not less than 150 lx;
- i) stop level with the landing on each floor that they serve.

4.13 Auditoriums, grandstands and halls

4.13.1 Where any building contains one or more auditoriums or halls fitted with fixed seating, floor space accessible to any person in a wheelchair shall be set aside for the accommodation of wheelchairs in such auditoriums or halls. Such space shall

- a) be situated adjacent, or in close proximity, to an exit door and shall be so arranged that a wheelchair will not obstruct any aisle or exit door, and
- b) be of a size sufficient to accommodate
 - 1) a minimum of one wheelchair where the number of fixed seats for which the auditorium or hall is designed is not more than 50,
 - 2) a minimum of two wheelchairs where the number of fixed seats for which the auditorium or hall is designed is more than 50 but not more than 400, and
 - 3) a minimum of three wheelchairs or a number of wheelchairs equal to 0,5 % of the number of fixed seats for which the auditorium or hall is designed, whichever is the greater, where such number of fixed seats is more than 400.

4.13.2 Wheelchair positions shall be distributed evenly throughout the facility. For each wheelchair position a companion seat shall be provided.

4.13.3 Each space accessible to a wheelchair shall be not less than 900 mm × 1,4 m. Such a space shall provide a line of vision of the performance comparable to the full range of seating that is not wheelchair accessible.

S2 Facilities to be Provided

- (1) In any building contemplated in regulation **S1** requiring facilities for persons with disabilities:
 - (a) persons with disabilities shall be able to safely enter the building, use all the facilities subject to the provisions of subregulation **(3)** within it and leave it;
 - (b) there shall be a means of access suitable for use by persons with disabilities, from the main and ancillary approaches of the building to the ground storey; via the main entrance, and any secondary entrance;
 - (c) there shall be a means of egress suitable for use by persons with disabilities from any point in a building to a place of safety in the event of an emergency;
 - (d) any lift installation that is provided shall be capable of serving the needs of persons with disabilities who are likely to be using the building;
 - (e) any commonly used path of travel shall be free of obstacles which limit, restrict or endanger the travel of persons with disabilities, or which prevent persons with disabilities from accessing the facilities provided in the building and the presence of such obstruction shall be made evident in a suitable manner to persons with impaired vision; and
 - (f) a suitable means of access shall be provided to any auditorium or hall situated in any building and such auditorium or hall shall, in relation to its seating capacity, be provided with sufficient open space to accommodate a reasonable number of persons who use wheelchairs or other assistive devices.
- (2) Where parking for more than 50 motor vehicles is provided in or in connection with any building having a means of access contemplated in subregulation **(1)**, adequate parking space shall be provided for the parking of motor vehicles used by persons with disabilities and a suitable means of access shall be provided from the parking area, whether such parking area be inside or outside such building, to the ground storey of such building.
- (3) Where, in terms of regulation **P1**, toilet facilities are required and the building is one requiring facilities for persons with disabilities in terms of regulation **S1**, an adequate number of such facilities shall be suitable for use by persons with disabilities: Provided that toilet facilities shall not be required in any such building classified as H3 in terms of regulation **A20**.