

Accommodation Schedule

Accommodation Schedule

Entrances

Description:

It is the transition between the outside world and the interior where one finds God's Word and communion with other Christians.

Function:

The entrance is the first point of contact with the building. It should be distinct with wind lobbies outside the entrance doors. (T&A 1998:249) The impression of the entrance is very important, it should already direct the user's thoughts to religion. After entering, the way of movement should be clear, leading to reception and other facilities.

	Disabled: The door opening should be at least 750mm when in a 90 degree opening position. The door handle should be of the lever arm type at a height of 1 200mm above floor level. Any level change in floor finish due to a threshold may not exceed 15mm. (SABS SS4, 1990:153)	Facilities Required	Norms and standards
Required Area: Minimum door width 1 700mm, minimum door height 2 300mm. Provide proper access for disabled. (T&A 1998:249)	Lighting: Standard service illuminance of 150 lux is required; 1 200mm above floor level with warm or intermediate colour appearance lamps. Lighting should be used to create atmosphere and contribute to the appropriate mood. (T&A 1998:413)	Door	If the entrance is made of clear glass, it should be visible to anyone by means of clear markings. (SABS 0400, 1990:96) Glass installed in a door should be of safety glass and at least 6mm thick, if the surface is bigger than 1sqm. (SABS 0400 NN3.1, 1990:96)
Requires Administration Area: -	Ventilation: -	Transitional area in floor	Before entering into a building, attention is drawn by a transition in the floor finish. The floor finish must resist wear and tear, dirt accumulation and external elements like rain.
Number of People: Provide gathering spaces inside and outside as part of the normal exit route where people can naturally gather. (T&A 1998:249) There need to be at least three to four entrances leading eventually to the auditorium. One or two entrances into the foyer will be adequate.	Circulation: Provide access from the entrance area/foyer to the ablution facilities. (T&A 1998:249)		
Equipment used: It could double as a security door with the necessary installations.	Fire Regulations: A room with a population of more than 25 people must have at least 2 exit doors opening in the direction of movement. (SABS TT17.1, 1990:183)		

Accommodation Schedule

The Foyer

Description:

A transitional space for waiting, receiving information, gathering and movement to other spaces.

Function:

- The foyer space will house a number of functions.
1. This is the first point of reception and directions to other facilities.
 2. It is a very important information and gathering area for people before and after services or activities. Notice boards must be clearly visible.
 3. This is the first impression of the building and should be very inviting and comfortable.

<p>Norms and standards:</p>	<p>Facilities required:</p>	
<p>Must be suitable for writing, minimum height: 1 150mm, minimum width 300mm. (T&A 1999:20-38)</p>	<p>Counter</p>	<p>Lighting: Lighting should be good but not harsh such that the tranquil atmosphere is not disturbed. An average daylight factor of 1% is required. (T&A 1998:416) The standard service illuminance should be 150lux with an intermediate to warm colour appearance. (T&A, 1998:413)</p>
<p>People could be waiting for an appointment or for others to arrive to attend a Sunday service or lecture. Install comfortable furniture: chairs and coffee tables for magazines.</p>	<p>sitting and waiting area</p>	
<p>Minimum height: 700mm, minimum width: 600mm (T&A, 1999:20-38)</p>	<p>Receptionist area</p>	<p>Ventilation: Mechanical ventilation is normally required, and air distribution may be by ceiling or wall grilles. (T&A, 1998:191)</p>
<p>Private automatic branch exchange system to receive all incoming calls at an operator who distributes it to the relevant people. Outgoing calls directly dialled.</p>	<p>telephone system</p>	<p>Circulation: The foyer space will mainly act as circulation space, therefore the standard circulation sizes are exceeded already.</p>
<p>adequate circulation space around exhibition boards without opposing normal movement in the foyer. Exhibition boards positioned to be easily noticed and read.</p>	<p>exhibition area</p>	<p>Fire Regulations: According to section TT28 of SABS 0400 (1990:189), any portal or foyer forming part of an escape route, must be the combined width of all escape routes that ends in that foyer, or 33% wider than the basis of the population that must be able to pass through, whichever one is the biggest. any exhibition that might take place in such a foyer must be fixed and should not protrude more than 150mm into the foyer (SABS 0400 1990:189)</p>

Required Area:
1 700sqm if there are three entrances. 0.65sqm/seat (T&A 1998:183)

Requires Administration Area:
40sqm.

Number of People:
It ranges from 50 to 8 000 people moving through the foyer space into the auditorium or other spaces. It is highly unlikely that all 8 000 people will want to be inside the foyer space simultaneously.

Equipment used:
Office equipment at reception; notice boards, seating furniture, exhibition spaces.

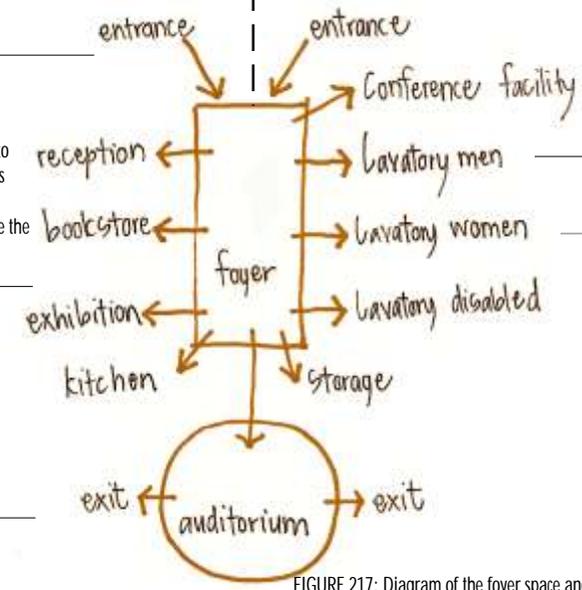


FIGURE 217: Diagram of the foyer space and related facilities extending from this space.

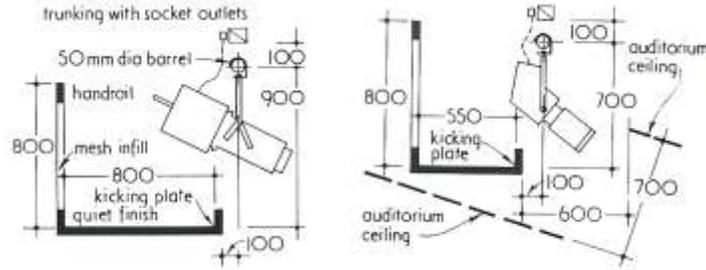


FIGURE 219: Auditorium lighting bridge using lanterns.

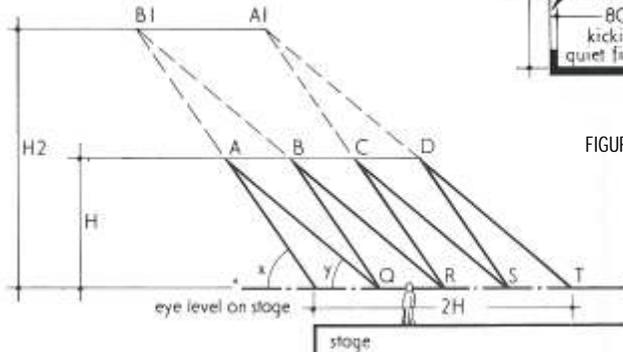


FIGURE 220: Locating theoretical positions of spot lights.

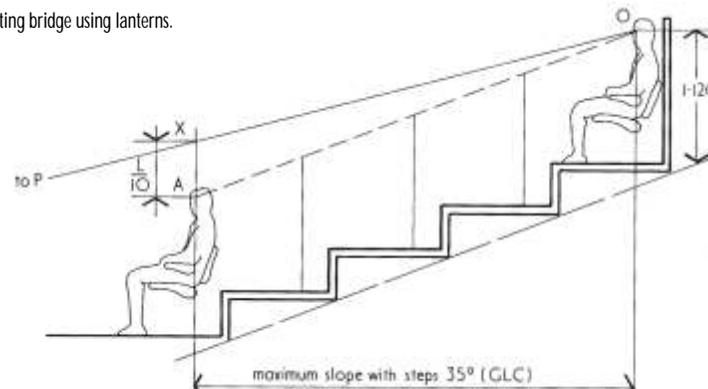


FIGURE 223: Mathematical method for finding balcony rake.

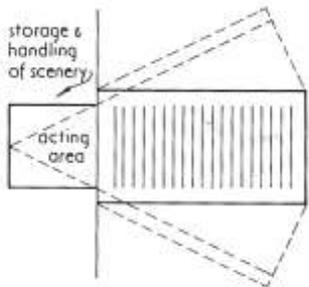


FIGURE 221: Proscenium stage, horizontal sight lines limiting the seating area.

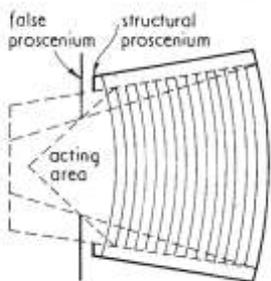


FIGURE 222: False proscenium further limits the acting area.

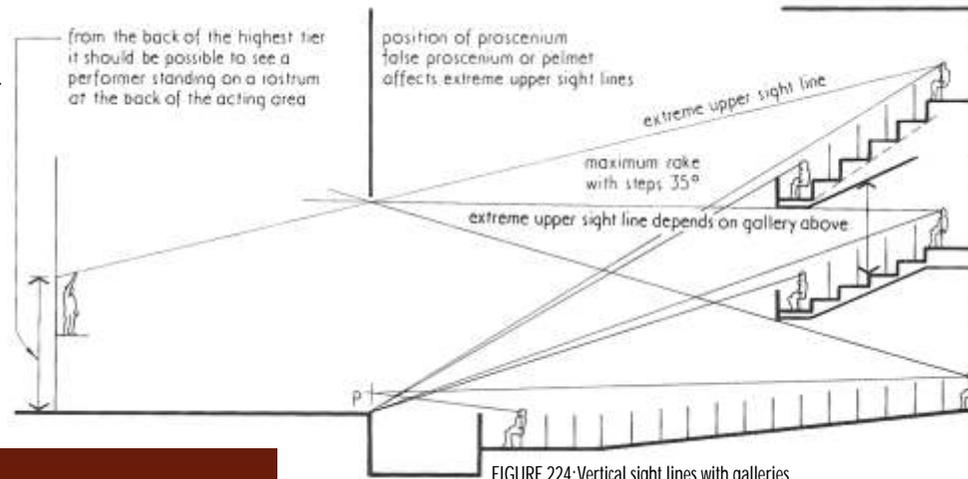


FIGURE 224: Vertical sight lines with galleries.

FIGURE 219: Auditorium lighting bridge using lanterns. (T&A 1998:192)

FIGURE 220: Locating theoretical positions of spot lights. (T&A 1998:192)

FIGURE 221: Proscenium stage, horizontal sight lines limiting the seating area. (T&A 1998:188)

FIGURE 222: False proscenium further limits the acting area. (T&A 1998:188)

FIGURE 223: Mathematical method for finding balcony rake. (T&A 1998:188)

FIGURE 224: Vertical sight lines with galleries. (T&A 1998:188)

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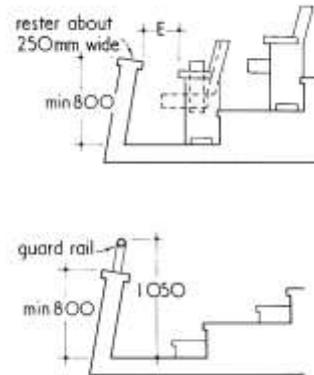


FIGURE 225: Sections through balcony fronts.

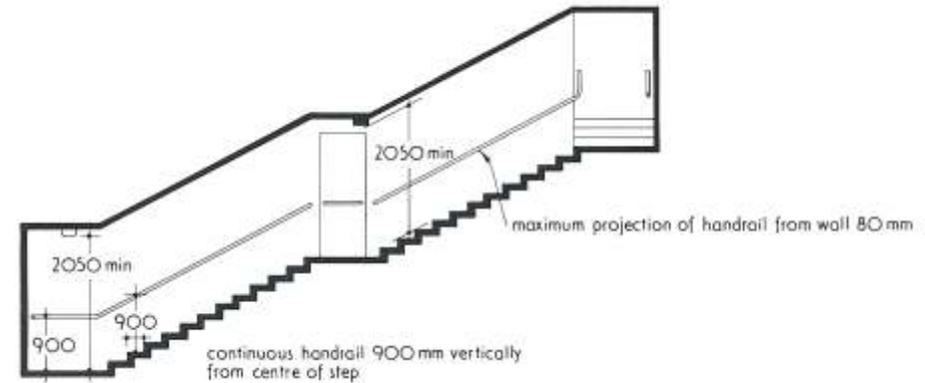


FIGURE 226: Section through an escape staircase.

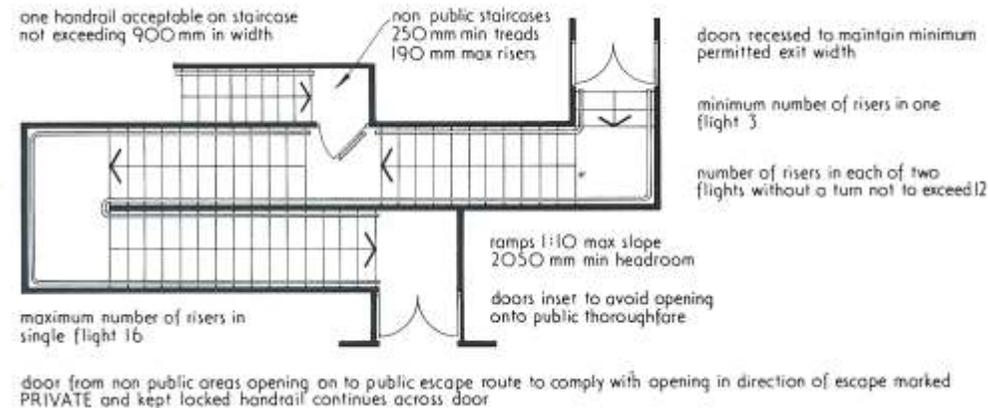


FIGURE 227: Plan of an escape staircase.

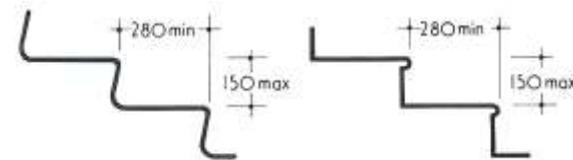


FIGURE 228: Two acceptable details for escape stairs.

FIGURE 225: Sections through balcony fronts. (T&A, 1998:189)

FIGURE 226: Section through an escape staircase. (T&A, 1998:192)

FIGURE 227: Plan of an escape staircase. (T&A, 1998:192)

FIGURE 228: Two acceptable details for escape stairs. (T&A, 1998:192)

Auditorium Stage

Accommodation Schedule

<p>Norms and standards:</p>	<p>Facilities required:</p>		
<p>Maximum headroom 2 500mm. (T&A, 1998:1900)</p>	<p>stage basement</p>	<p>Lighting: light sources directed at the speaker or actor should strike the actor's face at about 45 degrees above the horizontal. Lighting bridges above the auditorium are the best method of providing light from the direction of the audience. Refer to FIGURES 219 and 220.</p>	<p>Required Area: 350sqm.</p>
<p>Lifts, operated by ropes and winches, screw jacks or hydraulic rams, can be used to vary the levels of all or part of the stage. (T&A, 1998:1900)</p>	<p>stage lifts</p>	<p>Ventilation: Cooling and heating, according to the season, is necessary to create comfortable environments for the people using the stage. Air from the auditorium will move onto the stage.</p>	<p>Requires Administration Area: -</p>
<p>2 rooms, one for females and one for males. Provide for: clothes or hangers on hooks - 600mm centers; 1 250mm long hanging rail; door width 850-900mm; washbasin and long mirror 1 200mm x 600mm (T&A, 1998:190) lighting levels of 150-200lux are required.</p>	<p>dressing rooms</p>	<p>Circulation: there should be adequate circulation in the stage area, excluded from the acting area. Circulation space should be 35-50% of the stage area. Thus a minimum of 100sqm for circulation. (T&A, 1998:183)</p>	<p>Number of People: 20 -50.</p>
<p>Ambient sound level of 25dBA (T&A, 1998:193) require lighting levels of 200-250lux.</p>	<p>Workshop</p>		<p>Equipment used: lighting and sound systems. Computer screens. PC's.</p>
<p>For the storage of stage equipment and possibly music and drama instruments. This space could possibly be included within the basement. 3 Store rooms with sizes - 30sqm each. (T&A, 1998:183)</p>	<p>Store rooms</p>		

Description:

This is the area in the auditorium where the attention will be directed to. The pastor or speaker will speak from this area and other activities like song, dance and drama will take place on the stage.

Function:

The size of the stage should not limit religious actions. The stage should accommodate a praise and worship band, the pastor or speaker, the choir, choir dancing and drama performances. It must also be used for secular activities like large governmental conferences, business meetings ext.

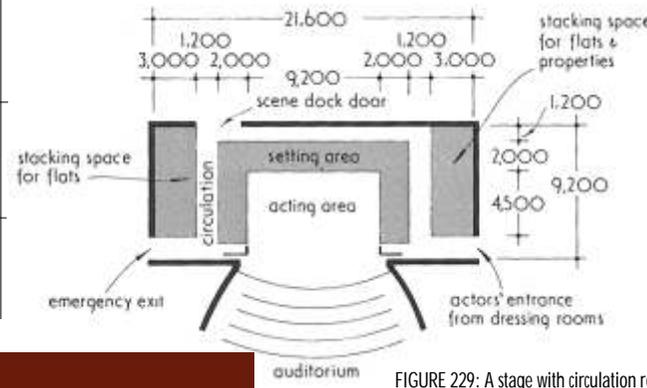


FIGURE 229: A stage with circulation routes.

FIGURE 229: A stage with circulation routes. (T&A, 1998:190)

Accommodation Schedule

Control Room

Description:

This is the room, looking onto the stage and auditorium, where the sound and lighting levels are controlled from.

Function:

The function of this room is to adjust sound and lighting levels to reach the desired effect. This space could possibly also be used for a recording studio.

Required Area:

25 - 30sqm (T&A, 1998:183).

Lighting:

Requires good lighting with the option of dimming. 150 - 200 lux.

Facilities Required:

Norms and standards:

Glass walls

Requires one direction tinted glass for the person inside to see the stage without the audience seeing him/her. Glass installed with a surface area greater than 1sqm, should be of safety glass and at least 6mm thick. (SABS 0400 NN3.1, 1990:96)

Requires Administration Area:

10sqm situated next to studio with entry directly into studio.

Ventilation:

Mechanical ventilation.

Work surface

Placement of equipment. The height of controls - 1100mm from floor. Work top height - 700mm from floor. Seat height - 450mm from floor. Work top depth of at least 600mm. (T&A, 1998:275)

Number of People:

1-5 people.

Circulation:

Movement between equipment must be easy and fast.

Equipment used:

Sound and lighting control boards, PC, telephone, sound and visual recording and editing equipment.

Mother's Rooms

Accommodation Schedule

<p>Norms and standards:</p>	<p>Facilities required:</p>	<p>Disabled: The door opening should be at least 750mm when in a 90 degree opening position. The door handle should be of the lever arm type at a height of 1 200mm above floor level. Any level change in floor finish due to a threshold may not exceed 15mm. (SABS Ss4, 1990:153)</p>	
<p>a glass wall looking into the auditorium with a good view of the stage is required. The glass must be one direction glass and the walls should have a good sound insulation. The glass should be tinted safety galas with a thickness at least of 6mm if the area is 3,2sqm or more. (SABS, 1990:95,96)</p>	<p>Glass wall</p>	<p>Lighting: 100 lux.</p>	<p>Required Area: The total space can be divided into a number of different rooms. The total space should be 200sqm.</p>
<p>This surface will be used by mothers to tend to babies in changing nappies and feeding. The height from the floor should not exceed 1 100mm. The surface must be smooth.</p>	<p>Work top surface</p>	<p>Ventilation: Mechanical ventilation. The temperature inside should be comfortable for small children and babies.</p>	<p>Requires Administration Area: -</p>
<p>Install at the same height as the work top surface.</p>	<p>Handwash basin</p>	<p>Circulation: The layout of the furniture must allow for the unpredictable movement of babies and toddlers.</p>	<p>Number of People: -</p>
<p>According to user's choice and preference.</p>	<p>Furniture</p>		<p>Equipment used: Work top surface, seating furniture and toys for children. Electronic sound system connection to hear the speaker inside the auditorium. A handwash basin will be a great contribution to the comfort of the mothers.</p>

Description:
Mother's with small children utilize this room during services.

Function:
To create an insulated space where young children can play unaffected by the service and the mothers still hear the message. These rooms must be suitable for other uses as well. Ex. Therapy and meetings in small groups.

Accommodation Schedule

Description:
Space for storage.

Function:
Space for storing items used in the auditorium for services and other activities.

Auditorium Storage rooms

Required Area:

15sqm with at least one wall set aside for shelves and the rest open for bigger equipment.

Lighting:

150 - 200lux.

Facilities Required:

Shelf

Norms and standards:

Maximum shelf height of 1 830mm above floor level with 455mm between shelve racks. (T&A, 1998:298)

Requires Administration Area:

-

Ventilation:

No mechanical ventilation required. Rely on infiltration.

Number of People:

-

Circulation:

-

Equipment used:

-

Fire Regulations:

-

Conference/ Lecture Facility

Accommodation Schedule

<p>Norms and standards:</p>	<p>Facilities required:</p>	<p>Disabled: The door opening should be at least 750mm when in a 90 degree opening position. The door handle should be of the lever arm type at a height of 1 200mm above floor level. Any level change in floor finish due to a threshold may not exceed 15mm. (SABS SS4, 1990:153)</p>	
<p>For equipment and furniture. 10sqm.</p>	<p>Storage</p>	<p>Lighting: Dimmer lights and black out (T&A, 1998:128)</p>	<p>Required Area: 1,5 sqm/person, thus 300sqm. allow sufficient space for alternative layouts. There should be an adjacent area for the audience to assemble before the meeting. (T&A, 1998:128)</p>
<p>Comfortable standard seats.</p>	<p>Furniture</p>	<p>Ventilation: Mechanical ventilation.</p>	<p>Requires Administration Area: -</p>
		<p>Circulation: -</p>	<p>Number of People: 20 - 200 people.</p>
		<p>Fire Regulations: Extinguishers should be clearly marked.</p>	<p>Equipment used: Audio-visual equipment. Projector, TV. Movable writing board and furniture. (T&A, 1998:128)</p>

Description:
A conference room with all the necessary equipment for lectures and discussions.

Function:
This is a facility for groups to meet either for lectures, organizational meetings or discussions.

Accommodation Schedule

Kitchen

Description:

This is a large multi-purpose kitchen.

Function:

It must serve various activities like catering for functions; serving tea and refreshments; making and storing food for the unprivileged ext. To calculate the areas required for the various activities in the kitchen, a value of 400 meals/day is used.

		Facilities Required:	Norms and standards:
<p>Required Area: 200sqm.</p>	<p>Lighting: The standard service illuminance should be 500lux with intermediate or warm colour appearance and luminaires positioned relative to the working surface. (T&A, 1998:413)</p>	Preparation area	Work top height- 900mm. Sink top height - 900mm. Wall bench width - 600 to 750mm. Island bench and table width - 900 or 1050mm. Length of work area within convenient reach - 1 200 to 3 000mm. Length for two people working together is 2 400 - 3 000mm. comfortable height when seated at 430mm is 700mm. (T&A, 1998:171) An area of 25sqm is required (T&A, 1998:170).
<p>Requires Administration Area: 10sqm.</p>	<p>Ventilation: -</p>	Storage area	With the storage of containers, the shelf heights and widths should approximate to heights of food containers. The limit for maximum reach is 1 950mm and heavy and frequently items should not be placed above 1 500mm. Refer to FIGURE . (T&A, 1998:171) Deep freeze stores at about 18 degrees Celsius are ideal for prolonged storage of frozen food, it may be purpose built and always be opened from within.
<p>Number of People: 1 to 20 persons.</p>	<p>Circulation: Spaces between equipment and fittings should at least be between 1 200mm and 1 500mm. (T&A, 1998:171)</p>	Goods access	External vehicular circulation for deliveries and refuse removals allow for space outside kitchen for the temporary storage of refuse. These are 0,75 - 0,85 meters cubed containers. (T&A, 1998:171)
<p>Equipment used: Cooking, washing, cleaning and storage equipment.</p>	<p>Fire Regulations: Fire extinguishers should be clearly visible.</p>	Was-up area	20sqm is required for the wash-up area.
		Cooking area	An area of 40sqm is required for cooking. Equipment installed according to user's needs. (T&A, 1998:170,173)

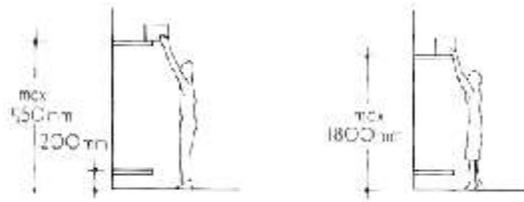


FIGURE 230: Height for storage shelves, limits for maximum reach.

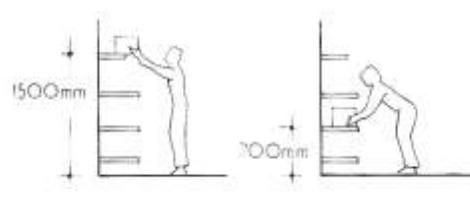


FIGURE 231: Convenient reach for heavy or frequently used items.

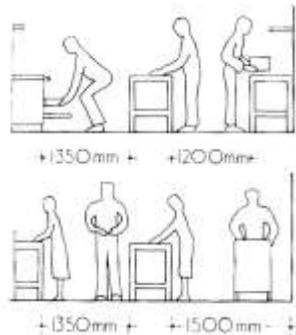
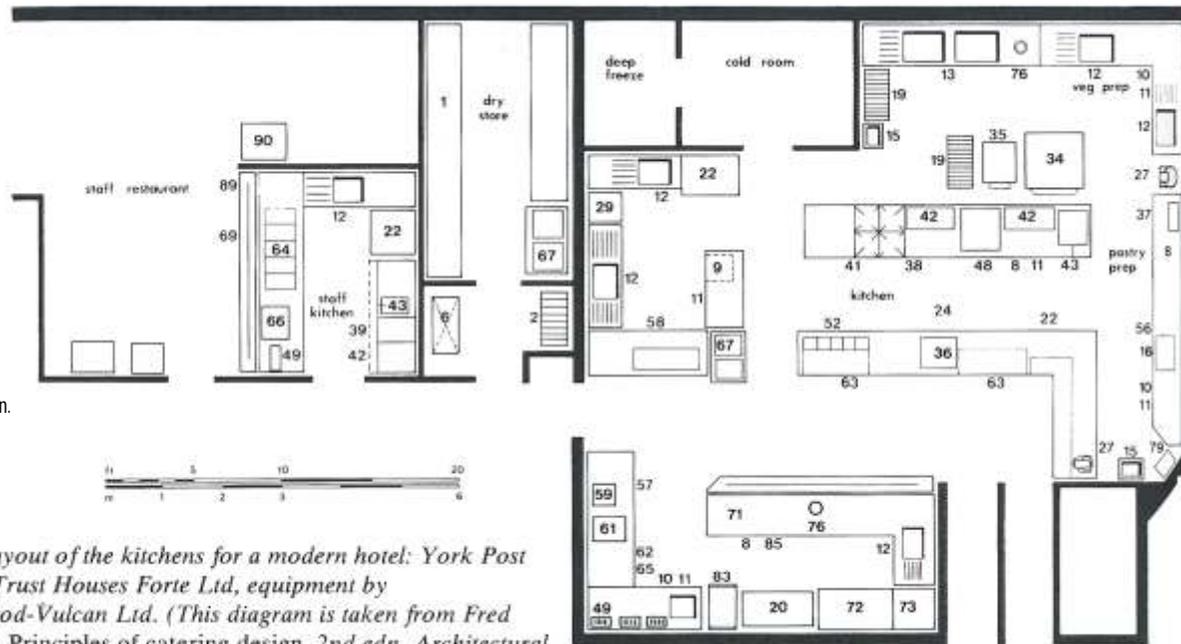


FIGURE 232: Measurements for adequate circulation.



20.20 Layout of the kitchens for a modern hotel: York Post House, Trust Houses Forte Ltd, equipment by Moorwood-Vulcan Ltd. (This diagram is taken from Fred Lawson, Principles of catering design, 2nd edn, Architectural Press, 1978. Numbers are explained in the key below and are taken from a system further developed in the book.)

- | | | | |
|---------------------------------------|--------------------------------------|---|--|
| 1 shelving | 22 refrigerator | 48 griddle plate | 66 tray stand |
| 2 vegetable racks | 24 deep freeze cabinet | 49 toaster | 67 ice cream conservator |
| 4 storage bins | 25 potato peeler | 52 hot cupboard with bain-marie top | 69 tray rail |
| 6 mobile racks | 27 mixing machine | 56 refrigerated under-cupboard | 71 receiving table for dirty dishes |
| 8 work table or bench for preparation | 29 chopping block | 57 refrigerated cupboard with doleplate | 72 stacking table for clean dishes |
| 10 work bench with waste bin | 33 pasty oven or pizza oven | 58 refrigerated display cabinet | 73 semi-automatic dishwashing machine |
| 11 work top with shelves | 34 forced-air convection oven | 59 milk dispenser | 76 waste disposal unit or scraping point |
| 12 single sink and drainer | 35 steaming oven | 61 coffee unit | 79 refuse bins |
| 13 double sink unit | 36 microwave oven | 62 unheated counter unit | 83 glass storage racking |
| 15 wash hand basin | 37 boiling top | 63 counter with infra-red lamps over | 85 glass washing machine |
| 16 marble-topped bench | 38 boiling top with open top burners | 64 counter display cabinet | 89 chilled water dispenser |
| 19 pot rack | 39 boiling top with solid top | 65 compressor or boiler under counter | 90 beverage vending unit |
| 20 trolley | 41 oven range with boiling top | | |
| 21 mobile tray racks | 42 grill or salamander | | |
| | 43 deep fat fryer | | |

FIGURE 233: An example of a kitchen layout.

FIGURE 230: Height for storage shelves, limits for maximum reach. (T&A, 1998:171)

FIGURE 231: Convenient reach for heavy or frequently used items. (T&A, 1998:171)

FIGURE 232: Measurements for adequate circulation. (T&A, 1998:171)

FIGURE 233: An example of a kitchen layout. (T&A, 1998:172)

Accommodation Schedule

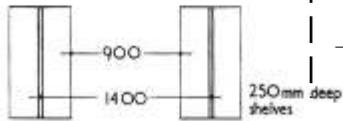
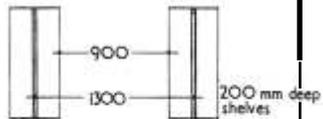
Bookstore

Description:

A Christian bookstore with literature, music and visual media.

Function:

To sell Christian books, music and videos to the congregation and visitors during the week and on Sundays.



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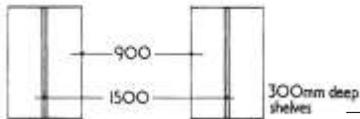


FIGURE 234: Aisle widths between book shelves. (T&A, 1998:297)

FIGURE 235: Bookshelf height. (T&A, 1998:132)

Required Area:
100sqm.

Requires Administration Area:
10sqm.

Number of People:
1 - 50 people.

Equipment used:
PC, telephone, cash till, credit card system, CD players, TV.

Disabled:
The door opening should be at least 750mm when in a 90 degree opening position. The door handle should be of the lever arm type at a height of 1 200mm above floor level. Any level change in floor finish due to a threshold may not exceed 15mm. (SABS SS4, 1990:153) The aisles between the shelves must at least be 1 200mm for wheelchair access.

Lighting:
300lux where reading takes place. Use intermediate or warm colour appearance lamps. (T&A, 1998:414)

Ventilation:
Natural or mechanical ventilation.

Circulation:
Aisles between display shelves should at least have a width of 1 300mm up to 2 250mm. (T&A, 1998:297)

Fire Regulations:
Extinguishers must be clearly visible. Escape routes must be clearly marked.

Facilities Required:

Shelves

Display counter

Cash counter

Norms and standards:

For book shelves the maximum height is 2 100mm with the bottom 300mm not used for display. (T&A, 1998:132)

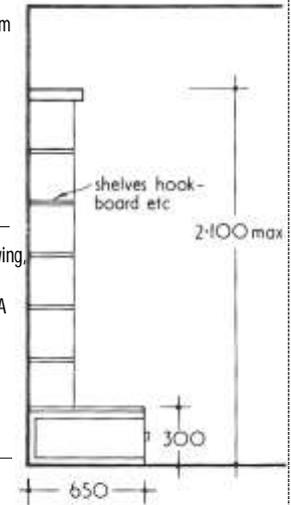


FIGURE 235: Bookshelf height.

Must be suitable for easy viewing, minimum height: 1 150mm, minimum width 300mm. (T&A 1999:20-38)

Must be suitable for writing, minimum height: 1 150mm, minimum width 300mm. (T&A 1999:20-38)

Chapel

Description:

Small Chapel for more intimate services.

Function:

Used for weddings, funerals and other teaching activities.

Norms and standards:

Facilities required:

Disabled:

The door opening should be at least 750mm when in a 90 degree opening position. The door handle should be of the lever arm type at a height of 1 200mm above floor level. Any level change in floor finish due to a threshold may not exceed 15mm. (SABS SS4, 1990:153) There should be space for two wheelchairs close to an exit route.

Storage space available when required.

Small store room

Lighting:

100lux standard service illuminance with intermediate or warm lamps. (T&A, 1998:413)

Required Area:

1,5 sqm/person thus 300sqm

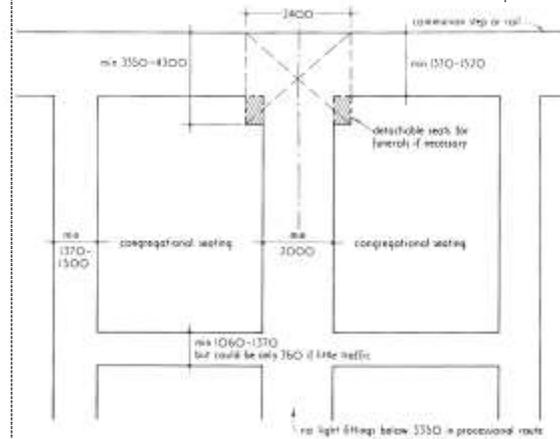


FIGURE 236: Aisle widths in the Chapel.

Ventilation:

Natural ventilation.

Requires Administration Area:

-

Circulation:

aisle widths should at least be 2 000mm up to 3 350mm. (T&A, 1998:250) See FIGURE .

Number of People:

250 persons maximum.

Fire Regulations:

Escape routes in a building should be clearly marked. (SABS 0400 TT29, 1990:189)_emergency routes must be independent from one another. The distance to the emergency door may not exceed 45m and should be along a corridor or aisle.(SABS 0400 TT16.4, 1990:181) the exit door should open in the direction of movement. (SABS 0400 TT20.1, 1990:183) the width of an escape route should be at least 1 800mm. the escape route must have for its full length a headspace of 2 000mm. (SABS 0400 TT20, 1990:184) according to the surface area, 2 fire extinguishers are required. (SABS 0400 TT37.4, 1990:193)

Equipment used:

Sound system, podium, Baptist font.

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Memorial Wall

Description:

Wall in memory of the dead, outside the church building.

Function:

For relatives to have a physical structure reminding them of their loved one who passed away.

Disabled:

Facilities Required:

Norms and standards:

Required Area:
500sqm.

Lighting:
Lighting to facilitate use at night. It should create atmosphere.

Requires Administration Area:
-

Ventilation:
-

Number of People:
-

Circulation:
Unobstructed movement around the wall. Walk ways on sides must be at least 2 000mm wide.

Equipment used:
-

Fire Regulations:
-

Prayer Garden

Accommodation Schedule

<p>Norms and standards:</p>	<p>Facilities required:</p>	<p>Disabled: Sloping walkways should not exceed a slope of 1:12; must have a landing of 1 200mm in length for every 1 500mm rise. The walkway must be provided with a handrail if it is longer than 600mm. The handrail should be at a height of 850mm to 1 000mm above the sloping walkway. (SABS 0400 Ss2, 1990: 152)</p>	
		<p>Lighting: Outdoor lights positioned to lit the landscape to accommodate evening use.</p>	<p>Required Area: -</p>
		<p>Ventilation: -</p>	<p>Requires Administration Area: -</p>
		<p>Circulation: -</p>	<p>Number of People: -</p>
		<p>Fire Regulations: -</p>	<p>Equipment used: Paved surfaces and outdoor furniture. Information boards describing the various biblical plants.</p>

Description:
Landscaping in the form of biblical plants and benches.

Function:
To create public and private spaces where groups or individuals can pray.

Biblical Plants

CLASSIFICATION OF BIBLICAL PLANTS

Moreletapark NG Church wants to implement Biblical plants into the landscaping surrounding the Church building. These plants would then create spaces for prayer and contemplation, thus a prayer garden. On this page is a list of Biblical plants. Not all of them has been discussed. In the following pages some has been studied in terms of symbolism and Biblical uses. This knowledge will enrich the design and placement of these different plants around the building. It is important for the people then to understand the reasoning behind the choice of plants and their positioning, therefore information boards in-between the plants are essential.

1. Cereals

- a. Barley (Gramineae)
- b. Beans (Leguminosae)
- c. Lentils (Leguminosae)
- d. Millet (Gramineae)
- e. Wheat (Graminae)

2. Fruit trees

- a. Almond (Rosaceae)
- b. Apple (Solanaceae)
- c. Fig (Moraceae)
- d. Mulberry tree (Moraceae)
- e. Nuts (Anacardiaceae; Oleaceae)
- f. Olive tree (Eleagnaceae; Oleaceae)
- g. Palm tree (Palmaceae)
- h. Pomegranate (Punicaceae)
- i. Sycamore (Moraceae)
- j. Vine (Vitaceae)

3. Vegetables and gourds

- a. Cucumber (Cucurbitaceae)
- b. Endive (Compositae)
- c. Garlic (Liliaceae)
- d. Leek (Leguminisae, Liliaceae)
- e. Onion (Liliaceae)

4. Flax (Liniaceae)

5. Flavors and condiments

- a. Anise (Umbelliferae)
- b. Fitches (Ranunculaceae)
- c. Mint (Labiatae)
- d. Mustard (Cruciferae)
- e. Saffron (Iridaceae)
- f. Salt (Chenopodiaceae)

6. Balms, drugs and incense

- a. Aloes (Liliaceae)
- b. Balm (Zygophyllaceae)
- c. Cane, calamus, sweet cane, sweet calamus (Gramineae)
- d. Cassia (Compositae)
- e. Cinnamon (Lauraceae)
- f. Galbanum (Lauraceae)
- g. Henna (Lythraceae)
- h. Myrrh (Bursaraceae, Cistaceae)
- i. Spikenard, nard (Valerianaceae)
- j. Spices (Leguminosae)

7. Costly timbers

- a. Algum, almug timber (Leguminosae)
- b. Ebony (Ebenaceae)
- c. Gopher wood (Pinaceae)

8. Forest trees and shrubs

- a. Acacia tree, acacia wood (Loranthaceae)
- b. Bay tree (Lauraceae)
- c. Box tree (Buxaceae)
- d. Bush, thornbush (Compositae)
- e. Cedar (Pinaceae)
- f. Fir, fir tree (Pinaceae)
- g. Juniper (Leguminosae)
- h. Laurel (Lauraceae)
- i. Hyssop (Labiatae)
- j. Mallow (Chenopodiaceae)
- k. Myrtle (Myrtaceae)
- l. Oil tree, wild olive (Elaeagnaceae)
- m. Oak (Fagaceae)
- n. Pine (Pinaceae)
- o. Storax tree (Styracaceae)
- p. Terebinth, turpentine tree (Anacardiaceae)
- q. Willow (Salicaceae)

9. Lilies and roses (Amaryllidaceae, Apocynaceae, Iridaceae, Liliaceae, Nymphaeaceae, Ranunculaceae, Rosaceae)

10. Reeds and rushes

- a. Cattail (Typhaceae)
- b. Flag, meadow, reeds (Butomaceae)
- c. Reeds (Graminae)
- d. Rush, papyrus, bulrushes (Cyperaceae)

11. Thorns and thistles

- a. Brier (Rosaceae)
- b. Thistle (Compositae)
- c. Thorn (Compositae)

12. Weeds and nettles

- a. Cockle (Caryophyllaceae)
- b. Nettle (Acanthaceae, Cruciferae, Urticaceae)
- c. Tares (Gramineae)
- d. Wheel, rolling Thing, whirling dust (Compositae, Cruciferae)

13. Wormwoods and poisons

- a. Bitter herbs (Rutaceae)
- b. Gall, hemlock (Cucurbitaceae)
- c. Wormwood (Compositae)

14. Hedges and fences

- a. Brambles, thorns (Rosaceae)

15. Other plants

- a. Caper (Capparidaceae)
- b. Mandrake (Solanaceae) (Tenny, 1980:564)

Wheat

Wheat forms a crucial part of the diet of the people. The grains are sowed when the first rains are coming down in Autumn. It is harvested at the beginning of the summer. (Alexander, 1977) Genesis 41:49. 'Joseph stored up huge quantities of grain, like the sand of the sea; it was so much that he stopped keeping records because it was beyond measure.' (NIV, 1985: 69)

The Triticum wheats are found in scripture as corn. (Genesis 40:2, Exodus 29:2) There is winter and spring sown wheat. Wheat has been called the "staff of life". (Tenney, 1980:568)



FIGURE 237: Wheat.

Myrtles (*Myrtus communis*)

This plant is found in the undergrowth of Palestine. The glossy, ever green leaves have a lovely aroma with an abundance of white flowers. Used to build huts with. (Alexander, 1977) Nehemiah 8:15. 'Go out into the hill country and bring back branches from olive and wild olive trees, and from Myrtles...' (NIV, 1985:706)

Myrtle is a symbol of peace and justice to the Jews. (Tenney, 1980:568)



FIGURE 238: Myrtles.

The Almond (*Prunus amygdalus*)

The flowers are white or light pink in Palestine. Its flowers come early in the year and is the first fruit tree to bud. It shows the turning of seasons even before it can be felt in the air. Similarly is the Word of God spoken through the Prophets. Their words are only a sign of what God is about to let happen. The almond tree-branch had to be a comfort to Jeremiah if the people did not want to listen to him. (Alexander, 1977) Jeremiah 1:11,12. 'The word of the Lord came to me: "What do you see, Jeremiah?" I see the branch of an almond tree.' I replied. "You have seen correctly, for I am watching to see that My word is fulfilled." (NIV, 1985: 1120)

In the Old Testament not anyone can enter the presence of the Lord in His Temple. The Lord declares that only the priests are fit for this job. The Lord was about to give a sign to the Israelites which tribe will be the priests. From each tribe a staff was placed before the Altar. Numbers 17:8 'The next day Moses entered the Tent of the Testimony and saw that Aaron's staff, which represented the house of Levi, had not only sprouted but had budded, blossomed and produced almonds.' (NIV, 1985: 216) If the Almond bud while all the other trees are still void of leaves, it symbolizes that God's promises will come to pass when one doesn't expect it. (Vosloo & J v Rensburg, 1993)

This tree reaches a height of 20 feet (6-7 meters) (Tenney, 1980:576).



FIGURE 239: Almond

Biblical Plants

Papyrus (*Cyperas papyrus*)

This is the name of the paper used in the ancient world and the plant from which it is made. It still grows in the north of Palestine and sometimes along the Nile in Egypt. The triangular stems were cut and packed in layers and compressed to form paper. Many parts of the Bible were originally written on papyrus. (Alexander, 1977:99)



FIGURE 240: Papyrus

The Incense Tree (*Boswellia*)

This plant has a thin easy strippable bark. The stem is cut and the resin tapped and sold as incense. This plant grows in Africa, South Arabia and India. The Magi from the East brought baby Jesus gifts of gold, incense and myrrh. (Matthew 2:11)



FIGURE 241: The bark of the Incense Tree.

This plant is found in the undergrowth of Palestine. The glossy, ever green leaves have a lovely aroma with an abundance of white flowers. Used to build huts with. (Alexander, 1977:99)



FIGURE 242: Coriander.

Coriander (*Coriandrum sativum*)

This is a one year plant reaching a height of 30 - 60 cm. The Israelites knew this plant because they compared it to the manna they received in the desert. Exodus 16: 31. 'The people of Israel called bread manna. It was white like coriander seed and tasted like wafers made with honey.' (NIV, 1985: 111) It has medicinal uses and is suitable for cooking. (Alexander, 1977:99)



FIGURE 243: Rue.

Rue (*Ruta graveolens*)

This is a small shrub reaches a height of 60 cm. The grey-green leaves are rich in pleasant smelling oil and is used as an antiseptic and fragrant. Jesus reprimands the Pharisees giving a tenth of Rue but neglect the love of God. (Alexander, 1977) Luke 11:42. 'Woe to you Pharisees. Because you give God a tenth of your mint, rue and all other kinds of garden herbs, but you neglect justice and the love of God. You should have practiced the latter without leaving the former undone.' (NIV, 1985:1562)



FIGURE 244: Yellow Chrysanthemum.

Yellow Chrysanthemum (*Chrysanthemum coronarium*)

This is one of the many colourful flowers of Palestine. (Alexander, 1977) Matthew 6: 28. 'And why do you worry about clothes? See how the lilies of the field grow. They do not labor or spin. Yet I tell you that not even Solomon in all his splendor was dressed like one of these.' (NIV, 1985: 1452)

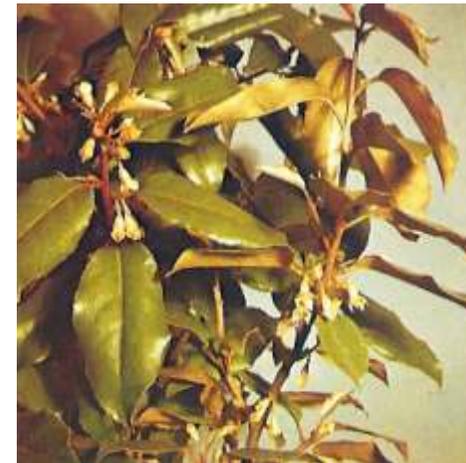


FIGURE 245: Olive Tree.

The Olive Tree (*Elaeagnus anustifolia*)

This is one of the most important trees giving a harvest in Palestine. The olives were eaten after being prepared. But the oil pressed from the fruit was even more important. The oil was used for cooking and as fuel for lamps. Sometimes it was also used as an ointment. It becomes symbolic of the ointment of the Holy Spirit. (Alexander, 1977) It is a deciduous tree and can reach a height of 20 feet (6-7 meters). It bears yellow flowers and fruit. (Tenney, 1980:568)

FIGURE 243: Rue. (Alexander 1977:99)

FIGURE 244: Yellow Chrysanthemum. (Alexander, 1977:99)

FIGURE 245: Olive Tree. (Hay & Synge, 1991:1569)

Biblical Plants



FIGURE 246: Flax.

Flax (*Linum usitatissimum*)

Linen was produced from the flax plant with the blue flowers. It grows to have a height of 45 cm. The plant is drawn from the ground and the fibers in the stem separated by leaving it in water. The fibers are also used for making rope, nets and lamp pits. (Alexander, 1977)

Linseed oil is made from the seeds. It is the main vegetable material used for cloth in Biblical days. Three types of linen were made from flax: a coarse linen (Ezekiel 9:2), a superior type of linen (Exodus 39:27) and a very fine beautiful linen (1 Cronicle 15:27). Linen was part of the priestly clothing (Exodus 28 and Leviticus 6:10). The armies in heaven were clothed in fine linen. (Revelation 19:14) (Tenney, 1980:572)



FIGURE 247: Pomegranate.

The Pomegranate (*Punica granatum*)

The red flowers of the Pomegranate forms a strong contrast against the dark green leaves. The fruit is round with a hard yellow shell and of similar size to oranges. Inside one finds numerous seeds. The robe of the High Priest is embroidered with images of pomegranates. (Alexander, 1977) Exodus 28:33. 'Make pomegranates of blue, purple and scarlet yarn around the hem of the robe, with gold bells between them.' (NIV, 1985: 129)

It is also used to decorate the pillars in the Temple of Solomon. 1 Kings 7:20. On the capitals of both pillars, above the bowl shaped part next to the network, were the two hundred pomegranates in rows all around.' (NIV, 1985: 483)

Pomegranates were certainly promised by God to His people (Deuteronomy 8:8), and were regarded as a definite blessing. It can reach a height of 30 feet (10 meters) (Tenney, 1980:575)

FIGURE 246: Flax. (Alexander, 1977:99)

FIGURE 247: Pomegranate. (Alexander, 1977:99)

FIGURE 248: The Vine. (Alexander, 1977:99)

Vine (*Vitis vinifera*)

This is a shrub with long shoots cultivated in vineyards in the warmer regions. It became a symbol of the Hebrew nation and reminded of the promised land. It was eaten as fresh fruit or dried as raisins. Wine was pressed from the grapes with their feet and then left to ferment in bags made from skins. (Alexander, 1977) The first miracle Jesus did was to change water into wine at the wedding in Cana. John 2:7-9. 'Jesus said to the servants: "Fill the jars with water", so they filled them to the brim. Then he told them: "Now draw some out and take it to the master of the banquet." They did so, and the master of the banquet tasted the water that had been turned into wine.' (NIV, 1985: 1597)



FIGURE 248: The Vine.

The Cedar Tree of the Lebanon (*Cedrus libani*)

This is a big cone bearing tree endemic to the Lebanon mountains. Today very few remains. In the time of the Old Testament the wood was used in Solomon's Temple. (Alexander, 1977) 1 Kings 5:6. 'So give orders that cedars of Lebanon be cut for me.' (NIV, 1985: 479)



FIGURE 249: The Cedar.

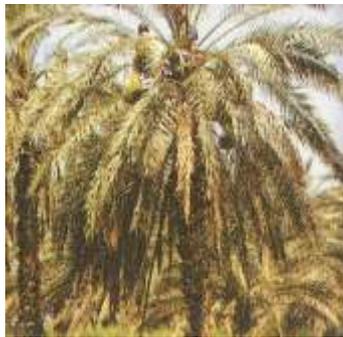


FIGURE 250: Date palm.

The Date Palm (*Phoenix Dactylifera*)

It grows in the warmer regions of Palestine and around the oasis in Sinai. It is a tall palm tree with a cluster of leaves at the top. The form of the leaves are used to decorate the capitals of the Egyptian columns. The palm became the national symbol of Israel. The people throw palm leaves on the ground when Jesus rides on the Donkey through Jerusalem. (Alexander, 1977)

Song of Songs 7:8. 'I said: "I will climb the palm tree, I will take hold of its fruit."' (NIV, 1985: 1011) almost every part of the date palm is valuable: the fruit, the stones, the leaves, the trunk, the crown and the branches. Tamar, the Hebrew name of the palm tree is often given to girls, because this stood for elegance and grace. (Tenney, 1980:573)

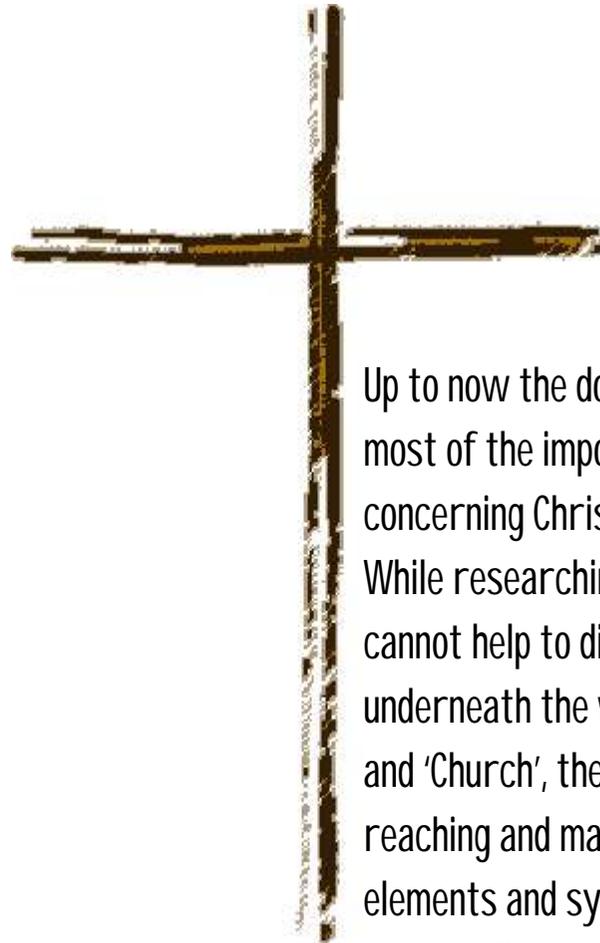
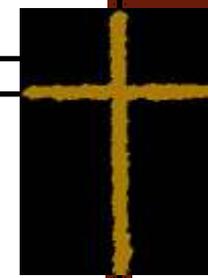


FIGURE 251: Fig.

The Fig tree (*Ficus carica*)

This is an important fruit in the Bible. Fig trees are often next to the road close to vineyard and houses. The leaves develop early to pronounce spring. The fruit ripens in summer. This tree is used numerous times in parables told by Jesus. (Alexander, 1977) Matthew 21:18 - 19. 'Early in the morning, as he was on his way back to the city, he was hungry. Seeing a fig tree by the road, he went up to it but found nothing on it except leaves. Then he said to it: "May you never bear fruit again!" Immediately the tree withered.' (NIV, 1985: 1472)

The fruit was considered part of the staple diet of the Israelites. (Micah 4:4). Even at the beginning of time, Adam and Eve tried to make garments or girdles with fig leaves. (Tenney, 1980:573)



Up to now the document touches on most of the important aspects concerning Christian Church design. While researching this topic, one cannot help to discover that underneath the words 'Christianity' and 'Church', there lay hidden, a far-reaching and marvelous richness of elements and symbols.

Now the greatest challenge is about to unfold...to convert this amazing knowledge into a visual representation glorifying the Almighty God.