

CLASSROOMS

CLASSROOMS VARY IN SIZE FROM APPROXIMATELY 15 TO 50 SQUARE METERS. ADDITIONAL FLEXIBILITY MAY BE PROVIDED FOR THESE SPACES BY PLACING A FOLDING PARTITION BETWEEN TWO OR MORE CLASSROOMS. IT HAS BEEN NOTED THAT THE MAJORITY OF RELIGIOUS EDUCATION CLASSES ARE MADE UP OF FROM SIX TO EIGHT PERSONS. AS MULTIPLE CLASSES COME TOGETHER FOR SPECIAL EVENTS, THE LARGER CLASSROOMS BECOME NECESSARY. VARIOUS SIZED CLASSROOMS HAVE BEEN DISTRIBUTED AROUND THE BUILDING SO THAT THEY ARE MORE READILY SHARED BETWEEN ACTIVITIES. CAREFUL SCHEDULING OF THE USE OF THE BUILDING IS IMPORTANT IN ORDER TO PROVIDE ACCESS TO ALL THOSE WHO WISH TO USE THE FACILITY. A MINIMUM STC RATING OF 45 SHALL BE PROVIDED BETWEEN CLASSROOMS AND BETWEEN THE CLASSROOMS AND THE CORRIDORS.

CLASSROOMS TO THE RIGHT OF THE WORSHIP CENTER ARE DESIGNED TO FUNCTION AS SMALLER INDEPENDENT ROOMS, TO BE JOINED INTO LARGER ROOMS OR TO BE OPENED INTO THE WORSHIP CENTER. HIGH CEILINGS WITH ACOUSTIC PANELS, CONCRETE MASONRY WALLS WITH GYPSUM WALLBOARD AND WALLCOVERING AND CARPETED FLOORS WILL COMPRISE THE FINISH MATERIALS. RECESSED FIXTURES WILL PROVIDE THE LIGHTING.

THE CHOIR ROOM/CLASSROOM CAN BE USED BY A VARIETY OF GROUPS FOR CHOIR ROBBING, CLASSES, DEVOTIONS OR GROUP COUNSELING. A SINK WITH RUNNING WATER IS PROVIDED IN THE CLOSET TO MUSLIM (ISLAMIC) WORSHIP REQUIREMENTS. IN COLD CLIMATES PROVIDE FEATURES WHICH WILL PROTECT THIS PLUMBING FROM FREEZING.

THE NURSERY HAS A SMALL TOILET WITH CHILD-SIZED FIXTURES. A CHANGING TABLE AND STORAGE UNIT WILL FIT IN THE ALCOVE. FINISH MATERIALS WILL BE THE SAME AS IN OTHER CLASSROOMS. LIGHTING DESIGN SHOULD PROVIDE SOME EXTRA FLEXIBILITY SINCE THIS ROOM MAY ALSO FUNCTION AS A REGULAR CLASSROOM. ALL CLASSROOM DOORS SHALL HAVE VISION PANELS OR ADJACENT SIDELIGHTS. CHILD SAFETY REQUIREMENTS PROVIDED SHALL BE FOLLOWED. FOR EXAMPLE, TEMPERED GLASS MUST BE USED IN LOWER WINDOWS OF ROOMS WHERE YOUNGER CHILDREN MAY BE PRESENT.

BLESSED SACRAMENT /RECONCILIATION ROOM

THESE ROOMS ARE LOCATED AWAY FROM OTHER MAJOR WEEKDAY ACTIVITY AREAS. THEY MAY, AT TIMES, BE USED AS MEDITATION ROOMS OR COUNSELING ROOMS. ACCESS TO RECONCILIATION IS FROM EITHER THE CORRIDOR OR THROUGH THE BLESSED SACRAMENT CHAPEL. COLORED, STAINED OR FACETED GLASS CAN BE PLACED IN THE EXTERIOR WINDOW; HOWEVER, NO SYMBOLS MAY BE USED. FINISH MATERIALS WILL BE THE SAME AS THE CLASSROOMS, ALTHOUGH SOME SPECIAL LIGHTING FEATURES AND FLEXIBILITY ARE APPROPRIATE.

SUPPORT FACILITIES

BEHIND THE SCREEN WALL OF THE WORSHIP CENTER ARE A FULL-IMMERSION BAPTISTRY, STORAGE AREA AND CHANGING ROOMS. POWER TO RUN A CIRCULATING PUMP AND HEATER WILL BE REQUIRED FOR THE BAPTISTRY UNIT. NO ELECTRICAL POWER OTHER THAN LIGHTING SHALL BE ALLOWED IN THE BAPTISTRY ALCOVE. ADJACENT INDIVIDUAL CHANGING ROOMS WILL INCLUDE EXHAUST FANS, GFI RECEPTACLES FOR HAIR DRYERS, FLOOR DRAINS, TILE FLOORS, A PERMANENT BENCH, CLOTHES HOOKS AND EPOXY PAINTED WALLS.

PROVISIONS MAY BE MADE FOR A MIQVEH (MIKVAH), A JEWISH RITUAL BATH. THE SPACE INDICATED AS TOILET/SHOWER ADJACENT TO THE SACRISTY MAY BE USED. THE SPACE SHOULD BE DESIGNED TO MEET MINIMUM ORTHODOX JEWISH REQUIREMENTS.

THE SACRISTY SHALL BE PROVIDED WITH LOCKABLE BASE CABINETS, A SINK AND SACRARIUM, A FULL-LENGTH MIRROR AND LOCKABLE STORAGE CLOSETS FOR VESTMENTS AND PARAMENTS.

TOILET ROOMS SHALL HAVE CERAMIC TILE FLOOR, BASE, AND WALLS, MOISTURE-RESISTANT CEILINGS, AND APPROPRIATE LIGHTING. ADEQUATE EXHAUST FANS AND FLOOR DRAINS ARE TO BE INCLUDED. A SMALL SHELF FOR PERSONAL BELONGINGS SHALL BE PROVIDED IN EACH TOILET ROOM. THE WOMEN'S ROOM HAS AN ADDITIONAL "LOUNGE" SPACE FOR APPLYING MAKE-UP, ETC., THIS SPACE MAY ALSO SERVE AS A BRIDE'S DRESSING AREA FOR WEDDINGS. IT SHOULD INCLUDE A VANITY, ABOVE VANITY MIRROR AND FULL-LENGTH MIRROR. IN THE TOILET ROOMS, AT LEAST ONE FIXTURE OF EACH TYPE SHALL BE ACCESSIBLE TO PERSONS WITH A PHYSICAL HANDICAP.

JANITOR CLOSETS WILL BE EQUIPPED WITH A FLOOR-MOUNTED MOP SINK AND STORAGE SHELVING. PROVIDE AN INTERIOR FIXED LADDER IN ONE OR MORE EQUIPMENT ROOMS OR JANITORS CLOSETS WHICH LEADS TO A ROOF ACCESS HATCH.

BELL TOWER

SEVERAL BELL TOWER SCHEMES ARE ILLUSTRATED, EACH REPRESENTING DIFFERENT CONSTRUCTION COST LEVELS. EXTERIOR MATERIALS FOR THE BELL TOWER SHALL MATCH THE EXTERIOR WALL MATERIAL AND ROOFING SELECTED FOR THE CHAPEL. BELL TOWERS 2, 3, AND 4 SHALL BE CONSTRUCTED OF A STRUCTURAL MATERIAL SUCH AS STEEL OR CONCRETE; HOWEVER, OTHER MATERIALS MAY BE CONSIDERED WHICH ARE APPROPRIATE TO THE GEOGRAPHIC AREA AND COMPLEMENT THE MATERIAL SELECTIONS FOR THE CHAPEL. THE STRUCTURAL SYSTEM FOR ALL FOUR BELL TOWER OPTIONS SHALL TAKE INTO CONSIDERATION LOCAL SEISMIC REQUIREMENTS.

SYSTEM DESIGN

STRUCTURAL

THE STRUCTURAL SYSTEM WILL MOST LIKELY CONSIST OF A CAST-IN-PLACE CONCRETE FOUNDATION, STRUCTURAL STEEL SKELETON, OPEN WEB JOISTS, AND STEEL ROOF DECK. THE PRIMARY WORSHIP AREA MIGHT ALSO CONSIST OF HEAVY TIMBER CONSTRUCTION. OTHER NON-COMBUSTIBLE STRUCTURAL SYSTEMS MAY ALSO BE USED WHICH MEET THE REQUIREMENTS OF THE CRITERIA PROVIDED WITH THE INDIVIDUAL DESIGN PROJECT. THIS CRITERIA WILL GENERALLY INCLUDE BUILDING CODES, MILITARY REGULATIONS, AND LIFE SAFETY CODES. NOTE THAT VARIOUS KINDS OF WOOD CONSTRUCTION AND FINISHES ARE DESIRABLE FOR THE INTERIOR OF THESE KINDS OF FACILITIES FOR THEIR AESTHETIC RICHNESS. THE LOCATIONS OF MAIN COLUMNS OR ARCH SUPPORTS FOR THE WORSHIP CENTER ROOF ARE INDICATED ON THE FLOOR PLAN AND FURTHER ILLUSTRATED IN THE SCHEMATIC FRAMING DIAGRAMS.

THE STRUCTURAL CONCEPT FOR THE WORSHIP CENTER ROOF INCLUDES HORIZONTALLY SPANNING DECK SIMPLY OR CONTINUOUSLY SUPPORTED BY SIMPLE SPAN PURLINS EXTENDING FROM THE EAVE TO THE DIAGONAL RIDGE. EAVE SUPPORT AT THE FRONT MAY BE BEAMS OR TRUSSES SPANNING BETWEEN MAIN COLUMNS AT THE CORNERS AT THE PYRAMID AND BETWEEN MAIN OR INTERMEDIATE COLUMNS AT THE OTHER THREE SIDES. RIDGE MEMBERS ARE SUPPORTED BY THE FOUR MAIN COLUMNS.

THRUST REACTIONS IN THE RIDGE MEMBERS ARE PROVIDED FOR AT THE TOP BY A COMPRESSION SQUARE AT THE BASE OF THE SKYLIGHT OR BY COMPRESSION THROUGH THE RIDGE-MEMBER-TO-RIDGE-MEMBER CONNECTION AT THE APEX OF THE PYRAMID. THRUST REACTIONS AT THE BOTTOM OF THE RIDGE MEMBERS ARE PROVIDED BY A TENSION SQUARE AT THE BASE OF THE PYRAMID.

HORIZONTAL LOADS, SUCH AS WIND AND SEISMIC, ARE TRANSFERRED THROUGH HORIZONTAL DIAPHRAGM ACTION OF THE ROOF DECK TO THE VERTICAL WALL / STRUCTURAL SYSTEM AT THE BASE OF THE PYRAMID TO THE LOWER FLAT ROOF DECK, THROUGH HORIZONTAL DIAPHRAGM ACTION OF THAT DECK TO CORNER WIND BRACING OF EITHER A STRUCTURAL BRACING SYSTEM OR A MASONRY WALL TO THE FOUNDATION.

COLUMNS LOCATED AT THE ENDS OF THE MOVABLE WALLS ON BOTH SIDES OF THE WORSHIP CENTER AND LOCATED AS REQUIRED ALONG THE BACK SHOULD BE UTILIZED TO REDUCE SPANS ON THOSE SIDES OF THE PYRAMID. THE STEEL TRUSS AT THE FRONT OF THE WORSHIP CENTER REQUIRES SIZING FOR THE FULL SPAN LENGTH EQUAL TO ONE SIDE OF THE PYRAMID.

IN SCHEME B, THE ACTIVITY CENTER SHALL BE FRAMED IN STEEL OR ANOTHER NON-COMBUSTIBLE MATERIAL IN A SIMILAR FASHION TO THE REST OF THE BUILDING.

STRUCTURAL DESIGN SHALL MEET REQUIREMENTS OF THE CRITERIA PACKAGE SUPPLIED WITH EACH SPECIFIC PROJECT. NOTE ALSO THAT THE STRUCTURAL SYSTEMS ARE TO MEET ALL APPLICABLE SECURITY CRITERIA REGARDING THE FACILITIES THREAT RATING, ETC.

MECHANICAL

GEOGRAPHIC LOCATION AND CLIMATE SHALL DETERMINE THE BASIC REQUIREMENTS FOR HEATING AND COOLING. SELECTION OF ENERGY SOURCES FOR HEATING AND COOLING SHALL BE BASED ON LOCAL AVAILABILITY AND LIFE CYCLE COSTS.

REQUIREMENTS FOR THE HEATING, VENTILATION AND AIR CONDITIONING (HVAC) SYSTEM SHALL BE DETERMINED BY THE PROJECT CRITERIA PACKAGE. LIFE CYCLE COST SHALL DETERMINE THE MOST APPROPRIATE HVAC SYSTEM. EXTERIOR WALLS, ROOF, AND BUILDING ENVELOPE SHALL BE DESIGNED TO COMPLY WITH CRITERIA AND TO BE LIFE-CYCLE COST-EFFECTIVE. ANNUAL ENERGY USE FOR THE FACILITY SHALL MEET ENERGY BUDGET REQUIREMENTS AND WEATHER DATA IN ACCORDANCE WITH THE PROJECT CRITERIA PACKAGE. THE EFFECTS OF THE SKYLIGHT SHALL BE CONSIDERED IN HEAT GAIN / LOSS CALCULATIONS.

ALL MECHANICAL SYSTEMS, INCLUDING DUCTWORK, GRILLES AND DIFFUSERS, SHOULD BE AS WELL CONCEALED AS POSSIBLE. THERMOSTATS AND OTHER CONTROLS, WHILE ACCESSIBLE TO THE STAFF, ARE TO BE PROVIDED WITH LOCKABLE COVERS AND LOCATED TO THE GREATEST EXTENT POSSIBLE OUT OF PUBLIC VIEW. ZONED TEMPERATURE CONTROL SHOULD AT A MINIMUM BE PROVIDED IN THE WORSHIP CENTER; ACTIVITY CENTER AREA; ADMINISTRATIVE AREA; AND PERIMETER CLASSROOMS. ADEQUATE EXHAUST WILL BE NECESSARY IN THE TOILETS, KITCHEN AND SERVICE CLOSETS. NOISE CONTROL IN MECHANICAL ROOMS SHALL BE AS REQUIRED. THE MECHANICAL / ELECTRICAL ROOM MAY BE DIVIDED INTO SEPARATE ROOMS. IF THIS IS THE CASE, EACH ROOM SHALL HAVE EXTERIOR ACCESS. MECHANICAL / ELECTRICAL ROOMS ARE NOT TO BE USED FOR ANY OTHER PURPOSES UNLESS AGREED TO BY THE APPROPRIATE MECHANICAL / ELECTRICAL DESIGNERS.

THE ARCHITECTURAL DESIGNER SHALL COORDINATE, EARLY IN DESIGN, TO ENSURE THAT SUFFICIENT CONCEALED SPACE IS PROVIDED IN WALLS AND ABOVE CEILINGS IN ORDER THAT THE HVAC DESIGNER MAY PROPERLY DESIGN A QUIET AND EVENLY DISTRIBUTED SUPPLY AND RETURN DUCTWORK SYSTEM. THE DUCTWORK SHALL BE LOCATED IN CONCEALED SPACES WHERE TRANSMISSION NOISE WILL NOT BE OBJECTIONABLE.

ACOUSTICS IS AN IMPORTANT CONSIDERATION IN THE DESIGN OF THE CHAPEL. THE DESIGNER SHALL MAKE EVERY EFFORT TO ENSURE THAT AN NC RATING OF 25 OR LESS IS ACHIEVED IN ALL OCCUPIED SPACES OF THE BUILDING. CONSIDERATION SHALL BE GIVEN TO AIR VELOCITY THROUGH DUCTS AND DIFFUSERS; DUCT-SIZING PROCEDURES; TYPES OF TURNS AND FITTINGS; DUCT LINING AND SOUND ATTENUATORS; AND THE RECOMMENDATIONS OF ASHRAE, SMACNA, AND APPLICABLE CRITERIA.

ALL EXTERIOR ON-GRADE MECHANICAL AND ELECTRICAL EQUIPMENT SHALL BE LOCATED WITHIN AN ENCLOSED AREA. ACCESS AROUND EQUIPMENT SHALL BE PROVIDED FOR SERVICE AND AIR FLOW.

AN ENERGY MANAGEMENT SYSTEM WITH OVERRIDE CAPACITY ACCESSIBLE TO THE USER SHALL BE PROVIDED. THE POSSIBLE REQUIREMENT FOR A FUTURE CONNECTION TO A BASEWIDE EMCS SHALL BE INVESTIGATED, AND APPROPRIATE PROVISIONS MADE, IN ACCORDANCE WITH THE CRITERIA PROVIDED FOR THE PROJECT.

A THEORETICAL DESIGN FOR A MECHANICAL SYSTEM MEETING THE ABOVE REQUIREMENTS FOR CHAPEL SCHEME A UNDER WORST-CASE CLIMATIC CONDITIONS IS ILLUSTRATED ON SHEET 18.

PLUMBING

UNDERGROUND DOMESTIC WATER SUPPLY, STORM AND SANITARY SEWERS ARE REQUIRED. TOILET FACILITIES, KITCHEN AND FLOOR DRAINS MAKE UP THE MAJORITY OF THE PLUMBING REQUIREMENTS IN THIS FACILITY. A DOMESTIC HOT WATER HEATER FOR THE KITCHEN AND SINKS IS TO BE PROVIDED. SOME ADDITIONAL PLUMBING FEATURES MAY BE REQUIRED IN CRAFTS AREAS. EXTERIOR WATER SUPPLY FOR LANDSCAPE MAY BE CONSIDERED IN APPROPRIATE CLIMATES. PLUMBING REQUIREMENTS ARE TO BE IN ACCORDANCE WITH THE CRITERIA PACKAGE PROVIDED WITH THE SPECIFIC PROJECT.

FIRE PROTECTION AND EMERGENCY LIGHTING

THE BUILDING SHALL HAVE A FIRE ALARM EVACUATION SYSTEM WITH MANUAL PULL STATIONS, AUDIBLE AND VISUAL ALARMS, ZONE CONTROL AND AN ANNUNCIATOR PANEL. NFPA STANDARDS, AND OTHER TYPICAL CRITERIA WILL APPLY AS APPLICABLE. A DETAILED CODE ANALYSIS WHICH CONSIDERS ACTUAL SITE CONDITIONS MUST BE UNDERTAKEN TO DETERMINE ALL LIFE SAFETY REQUIREMENTS.

EMERGENCY LIGHTING AND NIGHT LIGHTING ARE ESSENTIAL. EMERGENCY AND EXIT ACCESS LIGHTING SHALL BE ON THE BASE EMERGENCY POWER SYSTEM OR HAVE BATTERY BACKUP. ALL SIGNAGE AS REQUIRED BY LIFE SAFETY CODES ARE TO BE INCLUDED IN DESIGNS.

ELECTRICAL

LIGHTING WITHIN THIS FACILITY WILL BE ACCORDING TO ALL APPLICABLE CRITERIA AND WILL TAKE INTO CONSIDERATION THE FUNCTIONAL NEEDS OF THE SPACES. THIS, ALONG WITH FANS AND FRACTIONAL HORSEPOWER MOTORS, WILL MAKE UP THE MAJORITY OF THE ELECTRICAL LOADS FOR THE BUILDING. A BUDGET OF 100 WATTS PER SQUARE METER FOR LIGHTING AND MISCELLANEOUS 120-VOLT RECEPTACLES SHOULD SUFFICE. AN ADDITIONAL 50 WATTS PER SQUARE METER SHOULD BE BUDGETED FOR MECHANICAL SYSTEMS. ADDITIONAL POWER WILL BE NECESSARY IF ELECTRICAL AIR CONDITIONING IS ALLOWED. SOME ADDITIONAL POWER MAY BE REQUIRED FOR SPECIALTY ITEMS ON SPECIFIC PROJECTS.



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