Looking Southwest

The School's southern face
CONCLUSION

As I look back over my efforts during this thesis year, I realize that as an architect I have matured a great deal. Original design concerns gained reinforcing processes that will serve as design tools for the rest of my career. Most of the new knowledge gained developed predefined analysis tools and processes to give meaning and understanding to design decisions. But most importantly, I find myself slowly changing the way I conceive spaces as a designer.

Although it came after the programming for the project had been written, the importance of psychological need as a generator of design ideas became evident in the design. Programming by psychological needs gave me an improved criteria onto which I could base meaningful design performance decisions. This method of programming will serve to open ideas for creative new working, learning, and living environments.

It has become apparent to me that the integration of passive solar and daylighting design methodology does not have to control the design. Much of its influence came as early computer analysis of energy use performance and testing different systems to fulfill discovered needs. It appears that with proper computer software, passive solar design methodology will be easily integrated into any office's process, as I gain increased knowledge of its influences upon architecture.

The most important step forward taken over the thesis year was to begin conceiving spaces in three dimensions. This approach allows me to look at designs from the inside out, to think of architecture as a series of spacial volumes, space as sculptural form. It was hoped, and has proven to be a method that would carry my architectural expression away from the Miesian Box towards a human, impressionistic, sculptural statement.

My final words are directed towards anyone developing their own thesis proposals. Do something small and take apart the issues. It will prove to be a more valuable learning experience than you can imagine.

Thank You.
APPENDICES

A. DETAILED PROGRAM
B. SITE ANALYSIS
C. BUILDING TYPES STUDIES
D. SOLAR ANALYSIS DATA
PROGRAM

CHURCH

Nave is a place to find God, a metaphor of man's existence between earth and sky.
The meadow
The church is a place of safety, peace, God's house
The transition of attitude as one approaches the church and the path in the woods
The church as a lasting edifice and the qualities of stone
The dialogue between church and community, monolithic vrs. grace

Narthex/Portico

Activities/Users
Parish Families, visitors, and others
Portico, transition from outside to inside, more outside
Narthex, transition from outside to inside, more inside
Entering, socializing, coat storage

Character
Open, quiet spacious area
Gracious space allotment for milling about and socializing between families
Key for circulation, fellowship and information
Vistas into different parts of the church
Controlled views to exterior

Adjacency
Entry direct into nave
Also entry to chapel, leading to area of parish hall and church offices
Near bride's room, r.r., sacristy

Accessibility
Open 24 hours a day 7 days a week

Size Definition
8% - 12% of nave, 304 sq. ft. min., 504 sq. ft. max.
May desire space and volume that contrasts greatly with nave and accentuates qualities of the nave.

Furnishings
Need to have ample space for coats
Furniture, a few small pieces

Baptistery

Activities/Users
Priest, Baptism parishioner
Baptism, Blessing of holy water in baptismal font
Lighting of Easter candle
Baptisms usually done while only small group of family and friends present.

Character
Extremely simple
Stepping down into area of font/not submersion/
"Die with Christ and rise again"
Smooth materials

Adjacency
Flow of space narthex to baptism to nave
May, or probably is not a separate part, but is part of nave; close to the narthex.

Accessibility
Not readily accessible, open view to see/limited access by iron work for example, visually security and psychologial barriers may work

Size Definition
Min. 120 sq. ft./Max. 196 sq. ft.

Furnishings
Baptismal font
Easter candle 66" high

Nave

Activities/Users
Parishioners, priests, visitors
Worship, weddings, funerals, communion, special celebration

Character
Soaring? Hovering
Nave as a metaphor of man's existence
Nave as a soaring, quiet, space
Tight congregation
Place for celebration and indignation/respect
Symbols - sunburst, consecrated church, stained glass story of life of christ

Small meadow, sun streaming through the trees, diagonals, and early spring morning sunrise in the clearing, a sunrise unchallenged for attention.
Adjacency
One spatially with chancel
Flowing space of choir, chancel, nave, baptistery, day chapel
Connected to sacristy, confessional, reconciliation

Accessibility
Open to public 24 hours a day, 7 days a week, unless some service taking place
Poses security problem

Size Definition
400 seats, 9.5 sq. ft. to 10.5 sq. ft. per person
Min. 3,800 sq. ft. / Max. 4,200 sq. ft.

Furnishings
Pews, with kneelers
18"-24" per person

Chancel

Activities/Users
Priests (celebrants)
Lay person (commentator)
Other people involved in liturgy of the word

Character
Simplicity, organized, spaced and defined
Such celebration

Adjacency
One spatially with nave
Flowing space of choir, nave, baptistery, day chapel
Connected directly to priest's sacristy

Accessibility
A rise in levels indicates its area in the church, rising up to an uplifting experience

Size Definition
400 to 550 sq. ft.

Furnishings
Altar/ Baldachino center, act of transubstantiation
Lectern/ Left front where priest stands for liturgy of the word
Celebrant Chair/close to lectern or not where priest sits for liturgy of the word

Commentator/ lay person who reads
Credence Table/ holds holy water and wine
Chairs/ For other participants in liturgy of word

Chapel

Activities/Users
Priests
Parishioners
Visitors
Week day mass, worship, weddings, funerals, communion, special celebration

Character
This is a small church. It will need to have the same qualities as the nave.
The chapel will have a chancel and nave as the main church and also usually has the eucharistic reservation
For smaller groups, so a reduced more intimate scale
View into main chapel

Adjacency
Chancel of chapel connected to main chapel
Has its own confessional, reconciliation room, sacristy

Accessibility
Open to public 24 hours a day, 7 days a week
Also should be available to school

Size Definition
40 seats (10%-15% of main chapel)
40 x 9.5 to 10.5
Seating/ Min. 380 - Max. 420
Chancel/ Min. 200 sq. ft. Max. 240 sq. ft.
Confessional/ 4 x 4, 16 sq. ft., 4 x 6, 24 sq. ft.
Sacristy/ 50 sq. ft.

Furniture
Chancel has same pieces as large chancel
Also has Eucharist reservation, blessed sacrament
Jesus resides in church
Confessional - Reconcilitorv

Activities/Users
Priests
Penentant
Confession of sins, repentence

Character
Plain, simple, private space, intimate
Reconcilitorv has choice of screen between or face to face

Adjacency
Connected to nave

Accessibility
Open Sunday and by request

Size Definition
Confessional
Priest, 4x6 24 sq. ft.
Penentant, 4x4 16 sq. ft.
Reconcilitorv
1 Priest, 1 penentant, 120-140 sq. ft.
Small, intimate, private

Furnishings
2 chairs, 1 desk, a screen, kneelers

Sacristry

Activities/Users
Priests (2 at most)
Storage of chancel supplies, vestments, linens, altar appointments, candles, sacred vessels
Used by priests to prepare for mass

Character
Plain, easy to clean

Adjacency
Connected to nave
May be integrated with confessional and should be connected to reconciliation room

Accessibility
Open only to priests, securely locked when not in use.

Size Definition
175 sq. ft. max., 140 sq. ft. min.
Has one restroom with T. & S.

Furnishings
Sacrament sink, for holy water & wine
Normal Sink
Closet
Drawers
One secure cabinet
Vessels

Choir Room

Activities/Users
Choir members 10-20
Robing, robe storage, hymnal, music, choir practice
Also room for groom, best man, and groomsmen

Character
Bright, lively space
Acoustical but not ugly

Accessibility
Available from narthex

Adjacency
Next to rest rooms, direct access to narthex where processionals form
Away from priest's offices, nave and other quiet spaces.

Size Definition
10-15 sq. ft. per person
10-20 members
150 to 300 sq. ft.

Furnishings
Chairs
Piano
Mirror, shelving and closet space, 6" per choir member
Desk and file
Bride's Room

Activities/Users
- Bride, Attendants
- Used immediately before and after weddings by bride and attendants

Character
- Joyful space, one of the happiest rooms in the chapel

Adjacency
- Connected to a ladies rest room
- Very close to narthex

Accessibility
- May be easily accessible from narthex, but should be secure

Size Definition
- Bride and six to eight attendants
- 110 - 140 sq. ft.

Furnishings
- Dressing table, sink, mirror
- Full length mirror
- Theatrical lighting for pictures
- Couch and chairs

Parish Hall/Kitchen

Activities/Users
- Meetings, receptions, class room, outside of church activities (reunions) concerts, small recitals, plays and movies
- Parish families

Character
- Changing walls and arrangements that five different character to space
- Bright, daylit space
- Kitchen is simple clean space of durable materials and finishes
- Connects to outside

Accessibility
- Available to public when requested.

Adjacency
- Unit close to nave and off of narthex
- Next to courtyard so activities can move between indoors and outdoors

Size Definition
- One-half of nave area
- 1,900 - 2,100 sq. ft.
- Volume of room should be one that offers focus
- Large outside entrance
- Kitchen - 114-189 sq. ft.

Furnishings
- Chairs, tables, lights
- Kitchen appliances and accessories

Restrooms
- Men's 120 sq. ft.
- 2 W.C.  2U.  3 Lav.
- Women's 120 sq. ft.
- 3 W.C.  3 Lav.

Janitorial
- 40-60 sq. ft.
- Shelving, sink, cart storage
- Unmarked and unseen
<table>
<thead>
<tr>
<th>Total Square Footage</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Narthex</td>
<td>304</td>
<td>504</td>
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<tr>
<td>Baptistry</td>
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<td>750</td>
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<tr>
<td>Confessional/Reconciliatory</td>
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<td>196</td>
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<tr>
<td>Sacristry</td>
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<td>175</td>
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<tr>
<td>Choir</td>
<td>150</td>
<td>300</td>
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<tr>
<td>Bride's room</td>
<td>110</td>
<td>140</td>
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<tr>
<td>Parish Hall</td>
<td>1,900</td>
<td>2,100</td>
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<tr>
<td>Kitchen</td>
<td>114</td>
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<tr>
<td>Janitorial</td>
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<td><strong>Total Square Footage</strong></td>
<td><strong>10,420</strong></td>
<td><strong>12,224</strong></td>
</tr>
</tbody>
</table>
PARISH HOUSE

Multiple personalities of being a residential, office and religious place.
Relaxation of guests within the rectory.
A place of peace, cleanliness, honesty and simplicity.

Entry/Foyer

Activities/Users
Visitors to the rectory
Entry, welcome, orientation, movement, waiting
Coat and accessory storage

Character
Durable and warm, well lighted and directional
Initial exposure of building's character
Comfortable, peaceful, simple

Adjacency
Leads to living areas
Passages to kitchen, offices, and library
Connection to bedroom areas

Accessibility
Available to public but kept protected

Size Definition
100 - 200 sq. ft.

Furnishings
Chairs or other small pieces

Living Room

Activities/Users
Priests and other house guests
Visitors
Conversation, entertainment, relaxing, working, watching television, eating, meetings, etc.

Character
Bright individualistic space
Light and view are major components
Comfortable, clean and uncluttered, traditional

Adjacency
Connected to foyer, indirectly connected to dining area
Screened, adjacent to main court of the complex

Accessibility
Home of priests, readily available to welcomed visitors

Size Definiton
400 - 350 sq. ft.

Furnishings
Chairs, tables, couches, etc.

Parlor

Activities
Small informal meetings
Private meetings between priest(s) and parishioner

Character
Warm, friendly, relaxing
Small scale and comfortable
View and light will play important roles in this room

Adjacency
Connected to foyer and living room

Accessibility
Open to visitors and rest of home

Size Definition
140 - 150 sq. ft.

Furnishings
Small conversational grouping of chairs, couch, tables, etc.
Fireplace

Dining Room

Activities/User
Priests and Guests
Dining, sitting, serving, working, discussions

Character
Similar to other living areas
Maintain continuity and simplicity

Adjacency
Immediate to kitchen
Passage connecting to living room but still separating the rooms
Accessibility
Limited, available by permission

Size Definition
100 - 160 sq. ft.
seating for six

Furnishings
Chairs, table, sideboard, hutch

Kitchen

Activities/User
Priests
Food storage, food preservation, food preparation
clean up
Two or more in area working

Character
Durable surfaces following the general character
of the home
Well lighted work areas

Adjacency
Immediate to dining room
Close to garage area and utility room

Accessibility
Fairly private area

Size Definition
160 - 180 sq. ft.
Large storage areas

Furnishings
Cabinets, appliances

Bedrooms

Activities/Users
Priest, Assistant Priest, House Guests
Sleeping, preparing for the day, private study
and prayer, relaxing

Character
Bright open space, with an intimate or protected
view to the outdoors
Clean, uncluttered, personal
Not necessarily a cube, more spacial personality
involved
Non-determining neutral colors and textures

Adjacency
Bedroom each have own bath or two bedrooms may
share lavatory area and separate bath area
Bedrooms are in the same area of the rectory

Accessibility
Should seem accesible yet not properly gone to
without accompaniment

Size Definition
145 sq. ft. for each bedroom
18 sq. ft. of closet space
48 - 58 sq. ft. per bathroom if single, add 15 sq.
ft. if double

Furnishings
Bed, chair, dresser, table, desk and chair, lamp

Parish Offices

Secretary/Reception

Activities/Users
Secretary - Receptionist, Visitors
General office duties, helping visitors, waiting,
reception of visitors into office area

Character
Bright, open, clean, organized space, pleasant and
uncluttered
Eye contact for visitors relaxation

Accessibility
Available to the public and obvious to visitors

Adjacency
Next to offices and library

Size Definition
150 - 200 sq. ft.

Furnishings
Desk, chair, lounge chairs
Library

Activities/ Users
Various administrative people and visitors
Reading, filing church records, reflection, preparation
Space for church records, books, files, etc.
Work area for priests and others
Small meeting room

Character
Bright, quiet space
Dignified but not pompous
Low ceiling work areas
Sunlit space

Adjacency
Close to offices
Access from secretary's office
May connect to rectory

Accessibility
Available to priest, secretary, and others

Size Definition
200-250 sq. ft. Library
100 sq. ft. Workroom

Furniture
Stacks, desks, chairs, files, racks, main desk
Information books

Priest's Office & Assistant Priest's Office

Activities/Users
Priest, Assistant Priest
Administration duties, counseling, preparation of Liturgies

Character
Pleasant, relaxed, uncluttered area
Efficient work areas

Adjacency
Next to secretary, close to library

Accessability
Available to public
Priest's offices may have two entrances

Size Definition
Priest's Office 260-240 sq. ft.
Assistant Priest's Office 220-240 sq. ft.

Furniture
Desks, chairs, lounge chairs, bookcase, shelving, large work areas

Offices, Catholic Charities

Activities
Office activities, small meetings
Catholic charities
Phone calls, typing, general office activities

Character
Clean, open, well lit
Organized uncluttered space

Adjacency
Next to small meeting rooms
In cluster with parish offices & secretary

Accessibility
Easily accessible to other office areas

Size Definition
120-140 sq. ft.

Furnishings
Desk, files, tables, plants

Garage
2 Cars 560 sq. ft.

Utility
Washer, dryer, Mech. 100 sq. ft.

Total Square Footage

<table>
<thead>
<tr>
<th>Rooms</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry</td>
<td>100</td>
<td>200</td>
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<tr>
<td>Living</td>
<td>350</td>
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<tr>
<td>Parlor</td>
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<td>150</td>
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<tr>
<td>Dining</td>
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<td>160</td>
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<tr>
<td>Kitchen</td>
<td>160</td>
<td>180</td>
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<tr>
<td>Bedrooms</td>
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<td>712</td>
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<td>Baths</td>
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<td>100</td>
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<tr>
<td>Garage</td>
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<td>560</td>
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<tr>
<td>Secretary</td>
<td>150</td>
<td>200</td>
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<tr>
<td>Library</td>
<td>200</td>
<td>250</td>
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<tr>
<td>Workroom</td>
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<tr>
<td>Offices</td>
<td>580</td>
<td>640</td>
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</tbody>
</table>

Total 3,384 3,844 sq. ft.
SCHOOL

School as a second home and the elimination of the factory
Passive solar design and architectural excellence
Daylight without distraction
The failure of the open concept school, the necessity for
unique flexible rooms
Classroom as stimuli, not activity storage space
Scale and design for rapid growth/ personality changes
Community (parish) activities
Administration Waiting Room and General Offices
Activities/Users
Secretaries, students, teachers, visitors
Reception of visitors, telephone answering, typing, filing, xerox, mail
Question answering for students
Signing in, out
School announcements, system control

Character
Accessible to students and visitors
Supervisory position of main entries
Open, not a direct approach
Two areas divided by desk, if desk becomes outside edge gain maximum utilization of space.

Adjacency
Next to other administrative areas
Should have view of main entrances

Accessibility
Open all office hours
Must be capable of closing off space

Size Definition
150 - 200 sq. ft.

Furnishings
Reception counter, desk, chairs, file cabinets, typewriter, shelves, xerox, seating, storage cabinets.

Principal's Office
Activities/Users
Principal, students, teachers, secretary, visitors
Planning activities, discussions with staff, visitors conferences, interviews.

Character
Warm friendly character
Open, important, authoritative
View to exterior

Furnishings
Desk, chairs, files, storage cabinets, shelves

Adjacency
Next to other office areas
Accessibility
Direct access from reception desk

Size Definition
200 - 220 sq. ft.

Conference Room
Activities/Users
Principal, assistant principal, teachers, visitors
Meetings, discussions, interviews

Character
Open, stimulating atmosphere
Equal even lighting

Adjacency
Next to other office areas
Controllable view to exterior

Accessibility
Direct from main reception desk

Size Definition
225-250 sq. ft.

Furnishings
Tables, chairs, shelves

Health Suite
Activities/Users
Nurse, students, parents
Various basic examinations of students
Observation, record keeping, resting (students), minor first aid

Character
Clean, bright spaces, warm colors & material
Adjacency
Next to other office areas

Accessibility
Quick access from hall for frantic students & teachers

Size Definition
400-425 sq. ft.

Furnishings
Cabinets, 2 cots in separate areas, table, chair, sink, w.c.

Teachers' Workroom & Lounge

Activities/Users
Teachers
Class planning material collection & preparation, grading, reading, test preparation

Character
Warm relaxing area
Natural lighting
Soft comfortable finishes & furniture

Adjacency
Near other office areas but does not require access to offices
Access to library helpful
Exterior view & day lighting

Accessibility
Off main circulation routes, place for teachers not students

Size Definition
420 sq. ft.
1 room or divided through the school

Equipment
Tables, chairs, typewriters, xerox, couch, other furniture

Kindergarten - Class Area

Activities/Users
Students, teachers
Instruction, lecture, reading, writing, games, story telling, socializing, experimentation, playing, presentations, studying, test taking (verbal & written), movies, T.V., worship

Character
Flexible space able to adapt to many activities
Warm, comfortable colors & furnishings
Controllable area, identifiable for child
Physical & emotional stimuli
Natural lighting & acoustical control important
Spaces for 30 people in one activity or 1 person doing his own thing
May be desirable to have "exterior enclosed space"
Low ceiling height for children's comfort

Adjacency
Separated from other classroom, close to exit & playground
Separated from all quiet areas

Accessibility
Available to parent who will bring in and pick up children
Close to parking or major entry

Size Definition
900-950 sq. ft.
200 sq. ft. storage & R.R.

Furnishings
Desks, tables, chairs, storage cabinets, bookshelves, coat racks, lockers, plants, sink, tack space, chalkboard

Classrooms 1-8

Activities/Users
Students & teachers
Instruction, worship, lecture, reading, writing, games, story telling, socializing, experimentation, presentations, studying, test taking, movies, TV, AV

Character
Flexible space able to adapt to many activities
Warm, comfortable, colors & furnishings
Controllable area for staff
Physical & emotional stimuli
Natural lighting & acoustical control important
Most activities have total class involvement
Outside view not situated in room layout to affect attention
Adjacency
Adjacent to other classrooms
Less than 200' from R.R.
May be clustered

Accessibility
Close to library, R.R., multi-purpose areas

Size Definition
875 sq. ft. per classroom
16 classrooms
60 sq. ft. of storage per room
14,976 sq. ft. classroom space

Furnishings
Desks, tables, chairs, storage cabinets, bookshelves, coat racks, lockers, plants, screens, tack space, chalkboard

Learning Material Center  Stacks & Reading areas
Activities/Users
Students, teachers, visitors
Reading, writing, studying, story telling, instruction
Finding proper materials

Character
Space should accommodate group and individual activities
Even, non-glare day lighting supported by task lighting will add character to room
Warm, soft, comfortable room
Flexible room arrangement
Spaces for many sizes of activities
View out to extend and also back into building core
Higher ceiling for visual definition of space

Adjacency
Should be close to music/art areas
Should have central location in the building
May want close proximity to administration area

Accessibility
Should have public entrance
Should seem available to students

Size Definition
1200-1300 sq. ft.

Furnishings
Bookshelves, tables, chairs, study carrels, couches, check out counter, built-in furniture

Learning Material Center  A.V. storage & preview
Activities/Users
Librarian, teachers
Audio-visual equipment & accessory storage and preview of new materials by faculty

Character
Efficient, environmentally controlled space

Adjacency
Next to library and near hallway or library's main exit

Accessibility
Not available to students without supervision

Size Definition
200-225 sq. ft.

Furnishings
Cabinets, shelves, desks, chairs

Learning Material Center  Office Material Prep.
Activities/Users
Librarian
Cataloging of incoming material

Character
Efficient office work space close
With view into library

Adjacency
Next to main desk
Close to administration
Observation of main library

Accessibility
Available to other teachers

Size Definition
150-200 sq. ft.

Furnishings
Book shelves, desk, chair, file cabinet, table
Music
Activities/Users
Students, teachers
Sing, play instruments, listen to music
Character
Acoustical space for youngsters to begin developing
tonal sense
Room should keep sound in & out
Lighting should be bright without being distracting
Adjacency
Separated from quiet areas such as library &
administration area
Accessibility
Could be close to stage, if not the stage itself
Should be located with other activity areas
Size Definition
850-925 sq. ft.
Furnishings
Chairs, risers, piano, bookshelves, storage
 cabinets
Art Class area
Activities/Users
Students/teachers
Drawing, painting, coloring, lecture, instruction, movies, slides, displaying, judging
This area will be main classroom for art classes
involving levels
Character
Should be open area with bright lighting
Stimulating active, creative thinking
Natural lighting with no glare
Visually stimulating
Individuals at separate activities
Group instruction still to be easily accomodated
Room may be provided with visually stimulating
views as subjects for students
Exit to hallway, less than 200 ft. to building
exit
Furnishings
Tables, chairs, storage cabinets, sinks, &
work stations, desk, kiln, bookshelves, project
storage, tack space, chalkboard
Child size proportions
Gym Physical Education
Activities/Users
Students, teachers, visitors
Basketball, exercise, volleyball, dance, games,
dodgeball, kickball, large group meetings,
performing
Character
Adaptable large open space able to accomodate
many activities
Bright, well lit, preferable daylighting
Hard, durable materials, easy to clean, maintain
Viewing of activities
Little need for view, interior oriented space
High, durable ceiling 24' floor to ceiling
Adjacency
Close to large main exits (4) ways out of gym
Adjacent to large storage area
Accessibility
Easy access for public coming to games, meetings,
and other activities
Size Definition
Seating for 800
9,000-10,000 sq. ft.
Furnishings
Bleachers, basketball goals, gymnastic equipment,
other indoor sports equipment
Stage Activities/Users
Students, teachers, visitors
Plays, musical presentations, convocations,
community functions
Character
Adjustable variable space of durable construction
May be dual function space, ie. music room due to
close association
Adjacency
Next to gym, bleachers area
Should have ability to become separate space

Accessibility
Stages area available only with teachers supervision

Size Definition
800-920 sq. ft.
200 sq. ft. for curtains & other stage

Furnishings
All types of stage props & other assorted support equipment

Showers, Lockers
Activities/Users
Students, Teachers, Coaches
Changing Clothes, showering, antics, pep talks

Character
Maintainable, well ventilated space

Adjacency
Next to gym, close to outside, two way service

Accessibility
Easy access from gym
Exits to exterior, locked when not in use

Size Definition
700 - 725 sq. ft. each
One for men, one for women
Small lockers for gym clothes

Furnishings
Lockers, benches, showers, lavatories, w.c.'s

P.E. Office and Storage
Activities/Users
Teachers
Grading, planning, student conferences, relaxing, supervision

Character
Office may need view to exterior
Teacher needs to have observation of the gym area

Adjacency
Try not to isolate gym office from the other offices of the school
Storage to be off gym and easily accessible

Accessibility
Students should be able to find office

Size Definition
200 - 250 sq. ft. Office
300 - 350 sq. ft. Storage

Furnishings
Desk, chair, cabinets, shelves
Shelves, workbench, cabinets

Building Services
Activities/Users
Custodians
Custodial office duties, repair shop, storage of equipment, relaxing, talking, receiving goods, washing and cleaning

Character
Hard durable surfaces, easy to clean
Warm character if space is to double as relaxation area

Adjacency
Next to loading dock and on main or central hallway

Accessibility
Easy access for dock deliveries

Size Definition
375 - 400 sq. ft. Office and workshop
375 - 400 sq. ft. Storage

Furnishings
Shelves, desk, chairs, workbench, table, vending machines, laundry equipment
<table>
<thead>
<tr>
<th>Room</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waiting Room</td>
<td>150</td>
<td>200</td>
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<tr>
<td>Principal's Office</td>
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<td>250</td>
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<tr>
<td>Conference Room</td>
<td>225</td>
<td>250</td>
</tr>
<tr>
<td>Health Suite</td>
<td>400</td>
<td>425</td>
</tr>
<tr>
<td>Teacher's Workroom/Lounge</td>
<td>420</td>
<td>420</td>
</tr>
<tr>
<td>Kindergarten</td>
<td>900</td>
<td>950</td>
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<td>Classrooms 1-8</td>
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<tr>
<td>Stacks and reading</td>
<td>1,200</td>
<td>1,300</td>
</tr>
<tr>
<td>A.V. &amp; Preview</td>
<td>200</td>
<td>225</td>
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<tr>
<td>Office</td>
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<td>200</td>
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<tr>
<td>Music</td>
<td>850</td>
<td>925</td>
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<td>Art</td>
<td>850</td>
<td>925</td>
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<td>9,000</td>
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<td>Rest Rooms 1.5%</td>
<td>497</td>
<td>525</td>
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<tr>
<td>Janitorial .5%</td>
<td>165</td>
<td>175</td>
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<tr>
<td>Storage .5%</td>
<td>165</td>
<td>175</td>
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<tr>
<td>Mechanical 5.5%</td>
<td>1,824</td>
<td>1,925</td>
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<tr>
<td>Walls 7.0%</td>
<td>2,322</td>
<td>2,451</td>
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</table>

Total Square Footage          | 44,778 | 49,721 |
SITE ANALYSIS

Macro-contextual
The site region
A. Soil

Macro-contextual
The site region
A. Soil
Good top soil on clay base
B. Environment
The site is located in Zionsville, Indiana, a residential suburb eight miles north of Indianapolis. The town's fabric is composed mainly of small wood frame homes with a downtown core of one to two story brick structures. The town has experienced a recent revival. With the renovation of most of the older town and recent housing developments, Zionsville has almost doubled its population in the last 10 years.

The population is composed mainly of workers who commute to Indianapolis, who are in the middle to upper-middle class income bracket. There is a small core of elderly residents near the downtown area.

C. Accessibility
The major access point to the site will come south off of Bloor Lane. Bloor Lane is a east-west route that connects Whitestown-Zionsville Road to Cruse Road. Cruse Road ends where it
intersects Hyway 334, one-half mile south of the site. Most individuals coming to the site will be arriving by car.

D. Major Activity Nodes
Immediately north of the site is Zionsville High School. South of the site, but not visible from the site is "Boone Village", the major out of town shopping complex. Downtown Zionsville is very alive and has been restored and renovated. A tree lined brick paved Main Street, whose edges are made by one to two story brick buildings (expensive restaurants, shops, and boutiques) best represent the image Zionsville wants remembered as being Zionsville.

E. Climate

INDIANAPOLIS  Elevation 792 Ft.

<table>
<thead>
<tr>
<th>Temperature Average</th>
<th>Degree Days (Base 65°F)</th>
<th>Rel. Hum</th>
<th>Prec. Nor.</th>
<th>Wind</th>
<th>Snow Total</th>
<th>Average Number of Days of Sunup/Sundown</th>
<th>1/10&quot; Thunder</th>
<th>Fog</th>
<th>Percent IFR</th>
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<td>61 39</td>
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<td>sw 59 9</td>
<td>10 12 7 4 4</td>
<td>20</td>
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</table>

INCLINATION, SUN, %
WINTER, HORIZONTAL
% = .58
SOUTH
99 153
WEST
16 93
NORTH
93 153
EAST

% = .80
SOUTH
19 89
WEST
23 36
NORTH
174 36
EAST

OUTSIDE TEMPERATURE

WINTER
22 22 30 58 38 30 22
SPRING
41 41 52 63 63 52 41
SUMMER
62 62 73 84 84 73 62
FALL
45 45 56 67 67 56 45
Micro-contextural

The site

A. Topography
The site appears flat at first but further investigation reveals a gentle rolling quality that moves across the site.

B. Vegetation
The site is an abandoned field which is presently covered with tall grasses and perennials. The south edge of the site is defined by a row of mature oaks, maples, ashes and sycamores. The south-east corner of the site has a scattering of trees which reach out from some woods that extend on to the south-east. The trees in this corner together with the contours of the site define a small alcove in the boundaries of the site.

C. Drainage
Most of the water which drains off the site eventually goes into a pond on another piece of property on the northeast side of the site. The runoff arrives at the pond directly or by a small creek which runs along the south edge of the site.

D. Utilities
Gas, water, electricity, phone, and sewer are available from the north edge of the site along Bloor Lane.
E. Views Into The Site

The site can be viewed in its entirety best from the north. Driving down the backroad from the high school towards the water tower would be a typical approach. Driving west on Bloor Lane takes one through a sequence of events, mainly a tree lined drive with expensive homes with large well kept front lawns. One moves over the rolling terrain down, then up past an unkept yard and home, and then a sudden realization of the site. Moving along this route would partially expose a tall structure on the site.

Approaching the site from the east is quite a different series of events. Starting from 334, a turn north and one is moving past "Boone Village", a strip center stylized into Colorado mining town building forms. One then moves through a S-curve, a turn east and over a bridge over an old railroad track. The open north edge of the site becomes clearly visible after passing under a high voltage power line. Moving along this route would immediately expose a tall structure on the site.

F. Views Out From The Site (In third person)

He stood in the middle of the site, looking south at the band of mature oaks, maples, ashes, and sycamores that formed the south edge of the
BUILDING TYPE STUDIES

JØRN UTZON

Community

- THE BUILDING TAKES A VERY NEUTRAL POSITION IN THE COMMUNITY. IT IS A SIMPLE SHELL FOR THE "WORLD" WITHIN, MODERN FORM OF TODAY.

- SPACE POSES SINCE STRONG STATEMENT OF CONCRETE CLOUDS OF BARS TO EXIS OF FEEL.

- SPACE FOUSES SINCE STRONG STATEMENT OF CONCRETE CLOUDS ON AXIS TO AXIS OF FEEL.

Building Cluster

- Double shell experience; peaked areas, circulation, circulation, concrete blocks, patterned by use of flat face and height and light by continuous slits. On stepped elevation, the chapel and other facilities become roof angles. of corrugated metal.

Concise Clouds

- MAIN CHAPEL IS METAPHOR OF EARTH, SKY (CLOUDS), LIFE BETWEEN.

Church at Bagsværd

Floorplan a 6 meter grid

Meeting Rooms

Complete transverse halls divide clusters
Community

- Identifying Element: Tower
  - Tall rectangular, powerful but not a reaching soaring pinical. Still graceful & simple

- Site on border of "downtown" & residential block, historical.
  - Site controls & allows control of building approach as religious experience; "just entering the experience starts

Campus

- The tower & nave dominate, the chapels secondary and the classrooms & passageway are seemingly lowered to further emphasize their power.
- The organization takes full advantage of the site in the planning & layout. No parking

Buildings

- Assembly of rectors
  - Blocks
    - Is Cross only denominator?
- No towers: power and slenderness and campus "security" (sunken court) also clues
- Always step up into building, lifting, rising, experience

Cluster

- Church
- Chapel
- Administrative
- Classroom
- Nave
- Reflecting Pool
- Chapel Court
- Sunken courts give the added feeling of privacy and respectful attitudes for the constraints site
- Ceiling & adjacent walls go dark to give added emphasis to rear wall

- Perspective line goes to center, not cross

- Uplighting from drop fixtures sculpted to throw light out

- Light on cross from large east facing glass wall

- Back wall gets continuous gentle wash of sunlight

- Bands of light on west wall

- The materials have very subtle color tints changes to introduce patterns

- The church is seen as a complex stage set

- The seeming enclosed space (exterior perception) in open, bright, large, column-creation of rectangular space
FRANK LLOYD WRIGHT

Community

Surrounded by lowise structures. Not a dominating presence. In what was once residential area where its mass and weight would have been dominating without sharp rising presence.

Cost in place concrete also strong delineator

Building/Cluster

Up, down, through, getting to sanctuary and sat down a up down moving experience (Plan as determinant of form?)
Rectangular mass in small ornamental arrangement

Even on a restricted site, getting to church a very complicated experience.

Pagoda form, roof becomes skylight
LIGHT FROM MANY DIRECTIONS, EVEN SPACE

SITTING CLOSE TOGETHER, MANY SMALL GROUPS, ALL TOGETHER CLOSE
UNIT SPACE. DILIGENCE OF MANY

PATTERNS THE SPACE, ELEMENTS TOGETHER, CREATE SMALLER SCALE
Exterior, tower needs to be separated from building to give it emphasis and chapel the already present space lost do to the canopy.

Approach twisted into ground, indirect and climbing, many leeks.

SUNLIGHT CAUSES BURNOUT

Flushed complex interior visual experience, many elements, graceful flow.

LIGHT DRAWING

Back entrance more religious, inspiring, than chapel.

STAGE SET CHAI
As he turned to the east he noticed that the band of trees had broken up into a loose scattered group that seemed to define a small meadow area. He kept turning and was now looking northeast. In front of him was an old rundown home, surrounded by outbuildings that of equal or poorer condition. His view was obstructed somewhat by the fence and tall weeds that marked the edge of the property. His attention soon turns to the north. It is a wide open non-inspiring vista, dominated by a water tower. The tower looked to be about 80 feet high was painted a typical light green and was marked by black letters. A billboard for Zionsville. Beyond he could see the low structures of Zionsville High School and the school's football field. On the west edge of his view he sees a wood sided garage. His attention turns to the garage and why it is there. A few moments of study reveals no clues to its purpose. There was a home beyond but it had a garage. He was in a hurry so kept looking around. The western view was dominated by the high-voltage power lines in the distance. The edge of the site was defined by a fence row lined with small trees and bushes that acts as a screen of the adjacent property. An abandoned railroad bed completes the view. He turned back
to the alcove to study it some more, since he thought it was the nicest part of the site. He left the site as it began to rain.

G. Edge Conditions
Very soft, the most defined edge being the southern edge. The north edge is very open. The east and west edges are semi-enclosed.

H. Ingress/ Egress
From the north, off of Bloor Lane

I. Orientation
See information under Climate

J. Site Size
About 14 acres, basically rectangular
KENZO TANGE

Tokyo Catholic Cathedral

- Stainless steel, hyperbolic smooth form set against traditional natural materials of traditional construction.

- Could not escape the twin domes dominating the surrounding landscape. (POV here I am)

- Campus / Buildings
- Aerial total composition

- Church gets in court, tower has piazza
- Little consideration to approach, singular powerful statement with funnel collection system. Too bad

- Cathedral proper is distinguished from support structure by material.

- No school

- Contrast stainless steel & concrete panels. Panels have deep joint to emphasize roughness/splendour.
linear, axial focal zone - reduced to simple elements, doesn't have such a stage set character.

Maybe too vast an interior space for "light & congressional feeling. Vastness does seem to evoke emotion of awe. Lighting move for form than effect.

St. Mary's of Muncie, Indiana

10.9.83
Visit to St. Mary's Muncie
Sister Diane

School
Grade K-8
244 Students, rising
140 families

Class Size
30 max, pref. 35 max. period

Students Enrolled

<table>
<thead>
<tr>
<th>Grade</th>
<th>Number</th>
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<tbody>
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<tr>
<td>1</td>
<td>42</td>
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<tr>
<td>2</td>
<td>29</td>
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<td>3</td>
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<tr>
<td>7</td>
<td>19</td>
</tr>
<tr>
<td>8</td>
<td>18</td>
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</tbody>
</table>

Classrooms
800 sq. ft.

Administration
Principal
School Nurse
Receptionist

New addition
G.C. Bud Willitz
Library Gym 7 Classroom
Administration

Students have mass every morning
Students bring lunch Economics
About 2 rooms per grade-
Cross is above every entry on school
Individual buildings named after fallen soldiers, financed as memorials
Uniforms
Looking forward to new pair of Apple II computers

St. Alphonsus Church 300
Families 500
873-2885

★ grounds keeper

★ original church
fellowship hall 
3 abbeys in basurist
Community

Art on a landscape. Building is basically isolated. It is on a flat site and it dominates it with "collage" of "vernacular" forms. Chopped, patterned.

Building/Cluster

Floor plan as determinant of form. First floor lower grades; second, upper grades.

Materials are industrial, steel, post & lintel, sandwich panels

First floor

Spaces: Lots of visual noise from dialog in ceiling, clutter, if you will

Fractured character, spontaneous

To much information for eye, needs refinement.
Note: Although there was no formal building type study done, the schools designed by the firm P Perkins and Will were a constantly used resource for insights into elementary school design. Much of the information about those schools was taken from the book *Work Place for Learning* by Lawrence B. Perkins.
**SKYLIT SPACE, NO DIRECT STORAGE**

**SOLAR HEAT GAIN FRACTION**

180 ft² (glass area) x .17 (transmission) x .03 (absorption)

\[ \text{100.8} \]

\[ \text{Related to reflectance of materials; 180 concrete might be 150 or 60; black is 90} \]

**ROOM CAN ALSO REFLECT OUT HEAT**

\[ G(1) = 0.69 \times (0.11) \times \left( \frac{864}{40} \text{ (roof)} + \frac{224}{0.5} \text{ (walls)} \right) \]

\[ + 0.01 \times (\text{specific heat, air}) \times 5 \text{cfm} \times 30 \text{ people} \times 60^\circ \text{F} \]

\[ = 411 \]

\[ G(1.2) = 0.70 \times (\text{floor}) \times 1.15 \text{ BTU/hr/°F} (\text{surface film}) \]

\[ = 1305 \]

\[ G(2.3) = 0.70 \times (\text{wall}) \times 0.66 \]

\[ = 145 \]

\[ G(3.4) = G(2.3) = 145 \]

\[ C(4) = 0.2 \times 0.36 \text{ (south edge)} \]

\[ = 7.2 \]

\[ C_2(\text{corr}) \times \text{BTU/hr}/\text{ft}^2 \text{ (vertical corr.)} \times 0.870 \text{ ft}^2 \]

\[ = 3262.5 \]

\[ C_2(\text{corr}) \times 0.625 \] (volume) \times 150 \times 0.3 \times 2 \text{ BTU/ft}^2 \]

\[ = 3262.5 \]

\[ C_3(\text{corr}) = 0.525 \]

\[ C_4(\text{corr}) = 0.2 \times 3.26 \]

**CAN ADJUST CLEAR DAY GAIN VALUES TO ALLOW FOR SHADING DEVICES**

\[ \text{W} \quad 243 \text{ BTU/°F} \]

\[ \text{D} \quad 136 \quad .50 \]

\[ \text{S} \quad 111 \quad .20 \]

\[ \text{F} \quad 174 \quad .40 \]

\[ \text{NEVER REDUCE} \]

\[ \text{LOWERS THAN 20% OR LOWER THAN CLOUDY DAY NUMB.} \]
### WINTER

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<th>Clear Day</th>
<th>Heat</th>
<th>Unclear</th>
<th>Cool</th>
<th>Unclear</th>
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<td>35,0,325.</td>
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### SPRING

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<th>Unclear</th>
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<td>266,495</td>
<td>237,310</td>
<td>50,163</td>
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### FALL

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<td>924,492</td>
<td>371,724</td>
<td>25,851,72</td>
<td>9,062,710</td>
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### TOTAL

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<th>Cool</th>
<th>Energy</th>
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<td>Oc. C.</td>
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SUMMER CLOUDY OCCUPIED