ARCHITECTURAL PROGRAMMING

Program Spreadsheet – GSF, NSF, NOSF

Calculation Spatial Diagram for Schematic Design

5.1 Area spreadsheet for Administrative

ID	DEPARTMENT	PROGRAM CRITERIA		PROGRAM 2005			PROGRAM 2010			COMMENTS
		Type	NSF	Staff	# of Units	Total NSF	Staff	# of Units	Total NSF	
A	Administrative									
	Full TimeStaff:									
A1	Office Manager	P	125	1	1	125	1	1	125	desk + bookshelf + seating for 2-3 + storage
A2	Director of Religious ed.	P	125	1	1	125	1	1	125	desk + bookshelf + seating for 2-3 + storage
A3	Volunteer Director	P	115	1	1	115	1	1	125	desk + bookshelf + seating + storage
A4	Intern	P	115	1	1	115	2	2	230	desk + bookshelf + seating + storage
A5	Ministers Office	P		1	1		1	1		To remain in its current position (squared footage not added)
	Part time Staff:									
A6	Book keeper	WS	115	1	1	115	1	1	115	desk, chair, computer and storage, also doubles as receptionist
A7	Sexton	WS	80	1	1	80	1	1	80	desk, chair, computer and storage
A8	Music Director	WS	80	1	1	80	1	1	80	desk, chair, computer and storage
A9	Choir Director	WS	80	1	1	80	1	1	80	desk, chair, computer and storage
A10	Coffee Hour Director	WS	80	1	1	80	1	1	80	desk, chair, computer and storage
	Support Space:									
A11	Reception	O	160		1	160		1	160	single + double sofa + 3 chairs + coffee table
A12	Coat Closet	P	8			8			10	space for 12 coats + misc. space
A13	Staff Toilet	P	60			60			60	unisex, accessible
A14	Workroom:	0								
a	shared wk station		45		1	45		1	55	computer, printer
c	supply storage		20			20			25	office supplies and misc.
d	copier		30			16			16	copier and paper storage and work surface
A15	Kitchenette	O	50			50			50	6 linear feet of counter + undercounter refrig. + sink + coffee make
A16	Office/file storage	P								
a	general		95			95			95	6 vertical + 2 lateral file cabinets + seasonal storage (total of 800
b	files/limited acces		20			20			20	next to general storage
c	outdoor storage		48			48			48	6*8 for snow blower, ladder, hose etc.(closet accessible from the
	TOTAL STAFF			10			11			
	TOTAL NSF					1437			1579	
	TOTAL NOSF					1868.1			2053	30% circulation

Key: P-private   O-open   WS-work station

Steps in Program Area Calculations

1. NSF : NSF for each space X #Units

2. NOSF : Total NSF + Circulation

3. Total NOSF with efficiency :Total NOSF /

%Efficiency 4. Total with **10%** for mechanical

Subtotal : 3 + 4

5. With **2%** for exterior walls

Total GSF : Subtotal + 5

1. NSF – Net Square Footage

⁻Some circulation <u>may </u>be part of the unit sizes

(i.e. space to stand in front of counter or file cabinet) ⁻Some circulation

<u>is </u>included in the NSF for work areas and cubicles ⁻Some

circulation <u>is </u>included in the NSF for office spaces ・need space

for layout and to move around

- NOTE: Since office spaces still need additional circulation to be connected to the rest of the building the office is considered a NSF unit (not NOSF)

2. NOSF - Net occupiable square footage

・Need additional sf for circulation between cubicles,

offices, aisles in an auditorium, etc.

- How much more? This is an estimate, based on: •

Experience doing these types of layouts

- Studying existing successful plans of similar projects (doing area take-offs)

To get NOSF* - Guidelines for adding circulation

- **% of space enclosed** **% Circulation added** (offices, closets, workrooms)

- More than 50% Add 30% • Between 20 and 50% Between 15–25% • Less than 20% Add 10% • Note:

- Use your judgment – evaluate what activities are going on. These are estimates.

- Sometimes programs just put 25% on top of total NSF.

However, tailoring to the specific areas gives you better precision, especially if you want to revise

Calculating for NOSF

STAFF/SPACE PROGRAM CRITERIA STAFF UNITS NSF COMMENTS   TYPE NSF

Staff:

Manager PO 150 1 1 150

Counselors PO 150 3 3 450

Secretaries WS 80 2 2 160

Clerical WS 50 1 1 50

Support Areas:

Waiting/Reception O 15 0 10 150 Waiting for 10 Work Room/copier CR 100 0 1 100 Include copier @25sf Coat closet CR 10 0 1 10

Toilets CR 50 0 2 100

TOTAL STAFF 7

TOTAL NSF 1,180

CIRCULATION @ 30% 354

TOTAL NET OCCUPIABLE SQUARE FOOTAGE – NOSF 1,534

Legend: PO – Private office; CR – closed room; WS – open workstation; C – cubicle; O – open area

3. GSF: Gross Square Footage

1) NOSF With Efficiency – Total NOSF / Efficiency 2) Add

10% of NOSF with efficiency – Mechanical Space

3) Add 2% of Subtotal 1) + 2) - Exterior walls

· *If mechanical is programmed can skip this step*

Calculating for efficiency

· Total NOSF is divided by the % efficiency:

NOSF/ % Efficiency

4. GSF Calculation

EXAMPLE (with 75% Efficiency)

1. 1,534 NOSF/.75 = 2,045 2. Add 10% of #1 for Mechanical = 2,045 X 10% = 204.5 2,249.5

· 3. 2,249.5 X.02 (for exterior walls) = 44.99 TOTAL GSF 2,294.49

Calculating for total GSF

1) Total the NOSF

2) Estimate a building efficiency for the layout

(The higher the efficiency, the less room for additional circulation)

3) Estimate efficiency at 75% (for example)

4) Divide the NOSF by the % efficiency

**5) Take 10% of SF with efficiency and add to the total**

**6) Take 2% of the total and add for the final GSF total**

Example of Final GSF Summary Sheet
Bubble or Adjacency Diagrams

· The complete program has not yet been established - so not designing final layout yet

· Easy to understand and helpful to both client and designer

· Client is confident important issues and possible solutions have been determined and discussed before finalizing design

· Opportunity to rework the way things are done currently.

· Going through issues now and working things out abstractly saves time, money, avoids miscommunication and, hopefully, demands by client for additional unpaid work/changes later. Diagrams discuss programmatic/planning ideas and

options · Copying services can be centralized or decentralized

C

C

C

S

Dept Dept Dept

S

S

services
S

Dept Dept Dept

Dept Dept

C
Dept
S

C
Dept

Copy
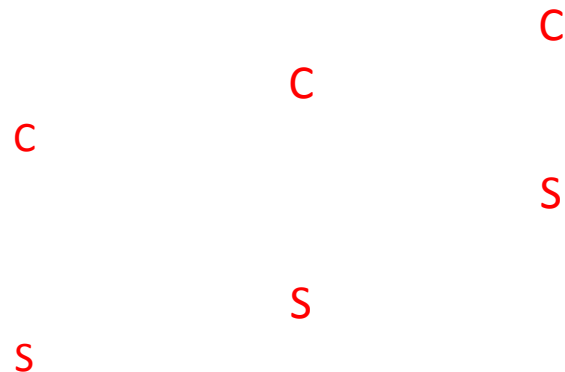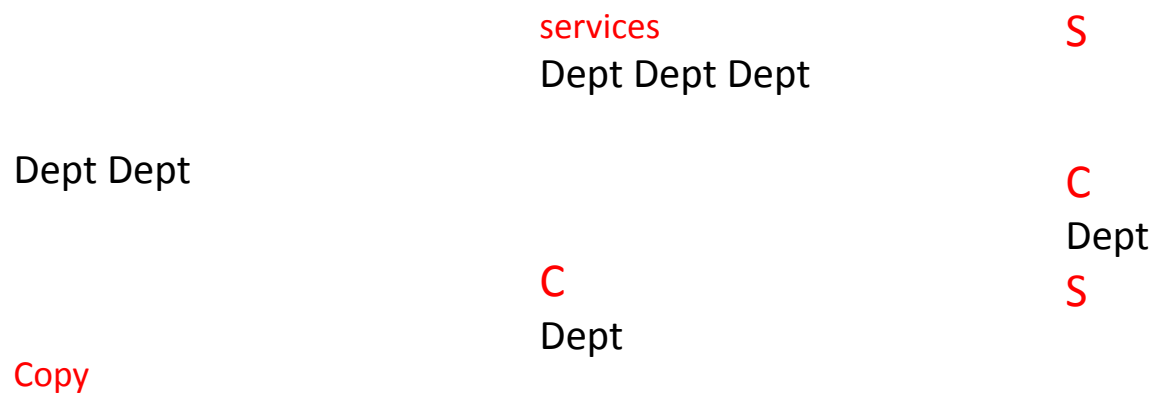
Centralized Decentralized
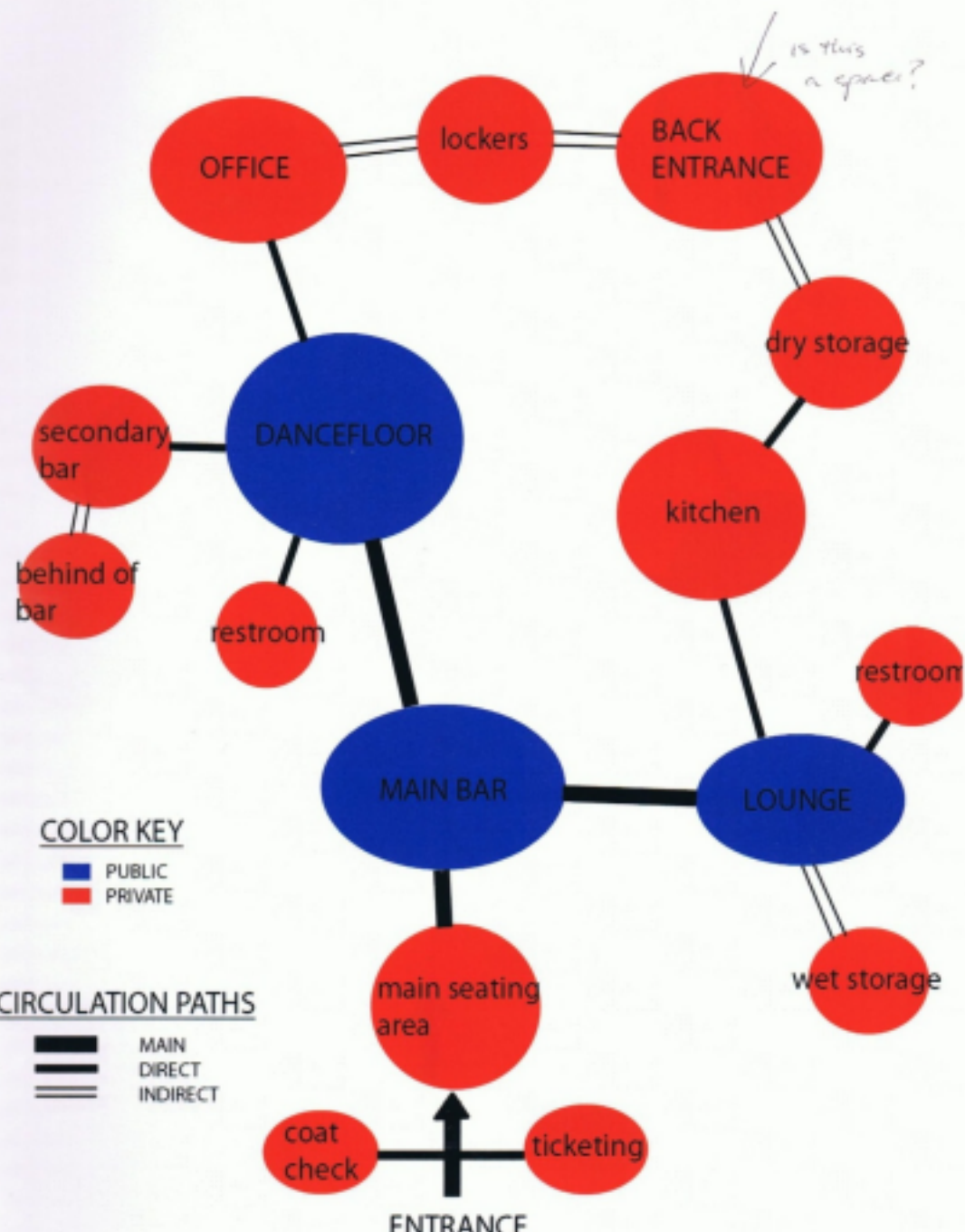
A few guidelines for better clarity of communication

· Diagrams are language - try to keep the symbols consistent and distinct for different areas or ideas, i.e.

· Avoid any crossing lines

· Show relative sizes of spaces

· Indicating a front and back entry helps establish a context, a relationship to areas outside the diagram.

- Try to distinguish closed and open areas through different types of lines or colors.
- Abstractly indicate planning arrangement – avoid "daisy" diagrams

- Degree of adjacency:

    - Can show the relationship of spaces by placing their symbols closer to or further from one another

    - If connecting space symbols (the bubbles) with lines – using different line types/weights helps sort out areas into building blocks

- Use a key to explain all symbols

BUBBLE DIAGRAM

OFFICE

lockers

BACK ENTRANCE

is this a space?

dry storage

secondary bar

DANCEFLOOR

kitchen

behind of bar

restroom

restroom

MAIN BAR

LOUNGE

COLOR KEY

■ PUBLIC
■ PRIVATE

wet storage

main seating area

CIRCULATION PATHS

━━ MAIN
═══ DIRECT
─── INDIRECT

coat check

ticketing

ENTRANCE

Diagram

clarity stove

dishw
asher   age

kitchen   frig

clos et

                table
        stor

- Create some hierarchy – avoid daisy diagrams.

- Do not put spaces in the same shape as labels giving information about the spaces. The center is the name of the overall space, yet all around it are in the space (I assume)

- Lack of difference in the shapes (types and sizes) is also confusing.
   Example of daisy diagram - little differentiation and indication of layout

ADJACENCY DIAGRAM

LOUNGE

SEATING

RESTROOMS

BAR

WET STORAGE

BEHIND BAR

KITCHEN

WET STORAGE

Final Programming Pre-schematic phases

· During the programming phase, in addition to establishing the staff space program and adjacency diagrams, need to explore options for building layering; Layering diagrams - what goes on what floor

· Discuss possible phasing of the project; degrees and ways to address future expansion on the chosen site

· Explore building height and volume

· Present blocking diagrams – how does building occupy the site? What is the footprint? What is the orientation of all entries/exits in relationship to the site? Orientation of departments/areas?
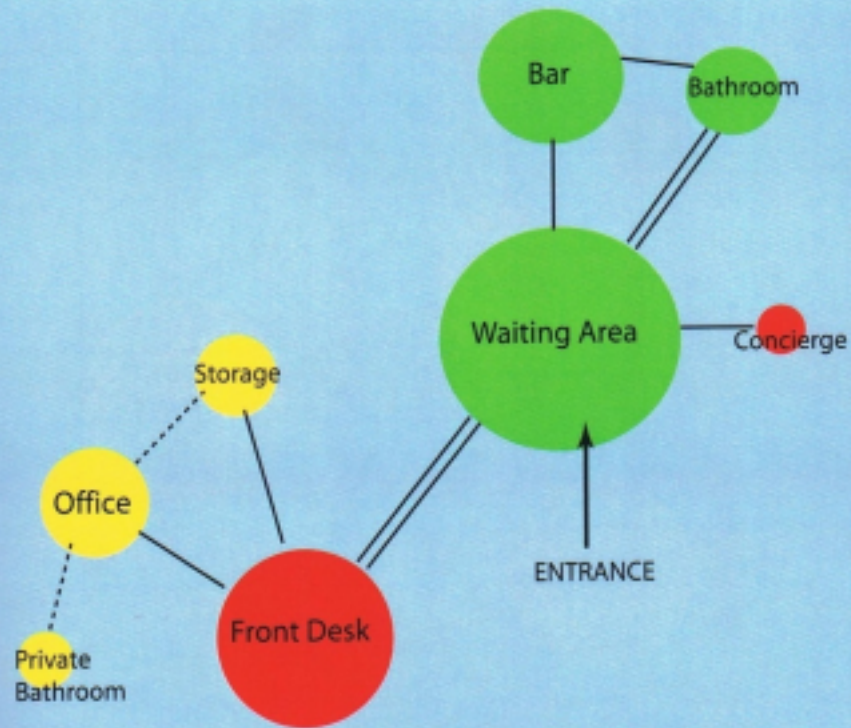
Restaurant
Adjacency Diagram

Restaurant Adjacency Diagram
Family Hotel Project

45

Lobby Adjacency Diagram

Bar

Bathroom

Waiting Area

Concierge

Storage

Office

ENTRANCE

Private
Bathroom

Front Desk

Adjacency Key

—— Important

═══ Essential

•••• Indirect

Public
Private
Support Spaces

Lobby Adjacency Diagram
Family Hotel Project

43

Blocking Diagrams

- Shows blocked out areas of the program, to scale

- Gives an idea of the building footprint, orientation, main entries /exits

- Must be sited to be give whole picture

- Must have a North arrow showing orientation

- Several options should be considered before going into schematic design

Blocking Diagram 1 – circle footprint

Block Diagrams

Diagram # 1: Circular Plan

Advantages:
1. Panoramic views of the site from any room in the hotel.
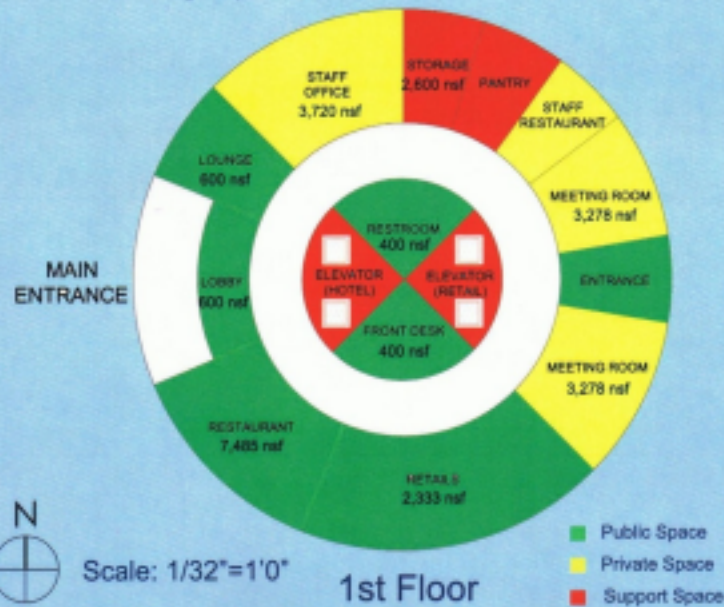2. Clear separation of space:
   Center: elevator core
   Inner Circle: circulation space
   Outer Circle: supporting space

Disadvantages:
1. Limited usage of the site
2. Higher cost of construction
3. Custom made furniture may be required to adapt to curving shape

STAFF OFFICE 3,720 nsf
STORAGE 2,600 nsf
PANTRY
STAFF RESTAURANT
LOUNGE 600 nsf
MEETING ROOM 3,278 nsf
RESTROOM 400 nsf
ELEVATOR (HOTEL)
ELEVATOR (RETAIL)
ENTRANCE
MAIN ENTRANCE
LOBBY 600 nsf
FRONT DESK 400 nsf
MEETING ROOM 3,278 nsf
RESTAURANT 7,485 nsf
RETAILS 2,333 nsf

N

Scale: 1/32"=1'0"

1st Floor

■ Public Space
■ Private Space
■ Support Space

56

Blocking Diagram 2 – L-Shaped footprint
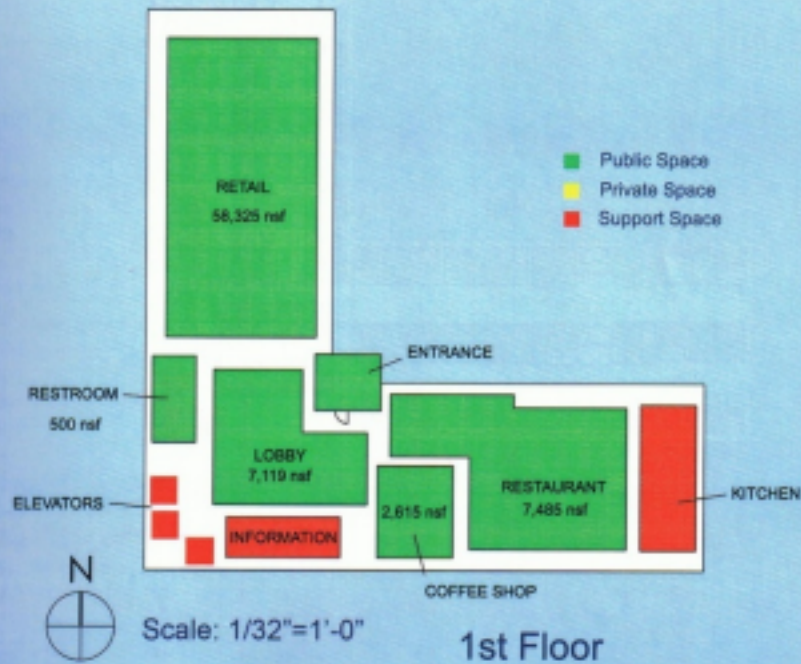
Block Diagrams

Diagram # 2: L-Shaped Plan

Advantages:
- Good Circulation flow from public to private spaces.
- Lobby acts as a circulation core distributing the flow of people to either end of the hotel.

Disadvantages:
- Limited usage of the space provided by the site.
- The views from a significant amount of rooms is poor.

RETAIL
58,325 nsf

ENTRANCE

RESTROOM
500 nsf

LOBBY
7,119 nsf

ELEVATORS

2,615 nsf

RESTAURANT
7,485 nsf

KITCHEN

INFORMATION

COFFEE SHOP

- Public Space
- Private Space
- Support Space

N

Scale: 1/32"=1'-0"

1st Floor

Blocking Diagram 3 – V-Shaped footprint

Block Diagrams
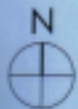
Diagram # 3: V-Shaped Plan

Advantages:
- Typical modern layout that has proved efficient in famous hotels.
- Outstanding views can be found in any room.
- Curving ends of the plan allow for the placement of restaurants, bars and hotel suites with panoramic views.

Disadvantages:
- Sharp corners of the hotel may be difficult to furnish, lowering the efficiency of the design.
- Southern-facing rooms may require additional cooling and/or sunshading.

SHOP SHOP
SHOP
SHOP
RETAIL
58,325 nsf
SHOP SHOP
SHOP SHOP

250 nsf
RESTROOM
ELEVATORS
FRONT DESK
LOBBY
7,119 nsf
RESTAURANT
7,485 nsf
RESTROOM
ELEVATORS

1st Floor
lobby, restaurant & retail

N

Scale: 1/32"=1'-0"

- Public Space
- Private Space
- Support Space

65

Blocking Diagram within Site

Blocking Diagram within Site