Building Planning Study Guide:  
Part A (315 Minutes/5.25 hours)

General Comments:
1. Creativity and beauty are not scored on this exam.
2. Time is a critical factor – don’t strive for perfection.
3. Reasons for failure:
   ▪ Miss program elements
   ▪ Fail to solve problem
   ▪ Don’t finish
   ▪ Deviate from program (don’t try to improve program)

Interior Layout Vignette – (60 Minutes/1 Hour): (1st Problem)
1. Read carefully, review plans and take notes – 5 MINUTES
   ▪ Room adjacencies (close or near means within 5-10’)
   ▪ Direct connection means door between rooms
   ▪ Note furniture type and quantity
   ▪ Note code requirements – door clearances, furniture clearances, HC circle, etc.
2. Turn on Ortho, turn on grid, and change to full cursor.
3. Draw sketch circles 3’ and 5’ and sketch rectangles 4’6” x 5’0”, 5’0” x 4’6” and 4’x4’. Stack rectangles on top of each other. - 2 MINUTES
4. Place furniture outside plan to get sense of room scale/sizes.
5. Place 4x4’ rectangle at the entrance door to the suite and place the reception area symbol inside of it. – 2 MINUTES
6. Draw rooms to approximate size (bubble diagram may help first) – 10 MINUTES
   ▪ Start at largest space and either work along windows/exterior or from entry out. If at window wall start with largest space first.
   ▪ Draw rooms approximately, finalize when furniture is in (step 2 and 3).
   ▪ “Central” means a space is in middle and is likely circulation area to all other rooms.
   ▪ “Close or Near” means room doors within 5’-10’ of each other.
   ▪ Tips:
     ▪ Proportion should be 2:1 max – avoid skinny rooms.
     ▪ Eliminate any L configurations and try to avoid L shaped rooms.
     ▪ Waiting area should be near entrance.
     ▪ Avoid corridors. If required only 4’ wide, unless corridors are over 5’ deep than make them 5’ wide for HC turn around.
     ▪ Less private spaces near reception (i.e conference room) unless noted.
     ▪ Senior/executive offices should be larger than subordinate offices (staff offices).
     ▪ Don’t overlap walls!
7. Move a 5’ and 3’ circle into each room – 2 MINUTES
8. Organize furniture within each space (tweak room sizes) – 13 MINUTES
   ▪ Place ALL furniture in room then start to place it. Rotate as required.
   ▪ Tips:
     ▪ Circulation clearances – typically 3’ draw circles.
     ▪ Don’t forget 5’ clearance HC!
     ▪ Pair similar furniture.
     ▪ Photocopier – 5’ clearance in front.
     ▪ Use axial/central layouts (aligned elements create sense of order).
     ▪ Consider door clearances at latch side.
     ▪ Centre furniture on walls if possible, but HC requirements first
     ▪ Side chairs only have to face desk if program says so.
     ▪ Conference room clearance measured from back of chair.
- Coffee tables don’t require access from all sides unless noted.
- Desks should not face blank wall unless necessary.
- Credenza should go behind desk.
- Avoid bookcases back to back or 90 degrees.

9. Confirm walls aren’t overlapping before placing doors! - **CHECK TOOL.**

10. Place doors – **10 MINUTES**
- Correct door swing direction:
  - Entry door into suite generally swings out.
  - All other doors generally swing into room.
- Ensure clearances (typically):
  - 24” beside latch and 60” depth on swing side
  - 12” beside latch and 48” depth on other side
- Tips:
  - Move door 1’ off corner to allow it to swing against side of file cabinet.
  - Entry door to suite generally swings out.
  - Can’t put doors in exterior walls.

11. Check List: - **SHOULD HAVE 15 MINUTES TO CHECK!**
- Walkthrough – good flow? Sit in each piece of furniture.
- Don’t make any changes without turning sketch layer back on first.
- All rooms drawn
- Walls don’t overlap – Check tool.
- Views and windows as required.
- Adjacencies or direct connections as required.
- Correct door swing direction (no out-swing office doors).
- Furniture not missed.
- 5’ HC circle each room.
- 3’ HC clearances for furniture.
- Acceptable visual control.
- All desks/workstations accessible.

**Table Diagrams:**
Table for 4:

Conference Tables:
15 MINUTE MANDATORY BREAK

Schematic Design – (240 Minutes/4 Hours): (2\textsuperscript{nd} Problem)

1. Read carefully, review plans and take notes – 40 MINUTES
   - Room adjacencies (close or near means within 5-10’)
   - Direct connection means door between rooms
   - Note code requirements – 20’ dead end corridor typically
   - LIFE SAFETY IS THE PRIMARY ISSUE FOR THIS EXAM!
   - CHECK THEN DOUBLE CHECK YOUR NOTES..>COUNT SPACES!

2. Dorf Space adjacency sheet:
   - Determine which floors rooms must go on first
   - Room adjacencies (close or near means within 5-10’)
   - Direct connection means door between rooms
   - Visual control – means an internal window between spaces
   - Note code requirements – 20’ dead end corridor typically (use a 20’ line)
   - Mechanical/electrical room on the main floor
   - Most problems include an element of control/restricted circulation:
     - Post office public areas separated from private work areas
     - Museum – gallery separated from workspace

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CONSIDER OVERSIZING MAIN FLOOR AND UNDERSIZING 2ND FLOOR!!

“( )” Denotes near or close to

“[ ]” Denotes direct access (door connects the two spaces)

Immediate access = entries to spaces are next to each other.

Convenient =

3. Draw rectangle size of ground floor on the floor to get a sense of scale.
4. Create parti handsketch of site analysis
5. Draw first floor elements on site plan to get a sense of scale at approximate size
   - DRAW ON CORRECT LAYER
   - USE CHECK TOOL FOR OVERLAPS
   - Layout spaces so they aren’t touching then can create space for access corridors
   - Don’t over restrict circulation = inefficient and unworkable plans
   - Overlap similar sized spaces if possible
   - Easier to undersize spaces:
     - Dimensions are to the centre line of walls
     - Remember corridors need to be a clear inside dimension
   - May want to consider a modular unit for spaces (ALS) Dorf says articulation is OK
   - Avoid L shaped rooms
   - Room proportion important (not over 2:1)
   - May be easier to stack same sized spaces, along with elevators, stairs
   - Can also stack washrooms if helpful—especially if the same size
   - But large spaces don’t have to overlap (not a structural exercise)
   - Place stairs at end of corridors 10 x 20 for 200sq.ft. (enter and exit on short dimension, if you want to exit across length use 12x18 stairs
   - Elevator machine room main floor (weight and vibration)
   - Rooms must be accessible from corridor
   - Modular sizing can be ok, but WON’T be rewarded – shape can vary
   - Double load corridors
   - Move double high spaces 10-12’ off main corridor – creates space for small internal rooms off T corridor.
6. Don’t finalize first floor elements until 2nd floor is developed
7. Assemble spaces into a finished floor plan and then adjust areas.
8. Types of Spaces
   - Entrances:
     - Primary entrance visible to pedestrians and perpendicular to street
     - Protected by overhang
     - Usually linked by a set of out-swinging doors that lead directly to the a lobby
   - Lobby
     - Important element, should be apparent.
     - Close to elevator, information/reception, and a stair if possible.
   - Work Spaces (Janitor, shipping, receiving, refuse, storage):
     - Generally off limits to public and located near services access for building.
• Services Spaces:
  • Me and space should be on exterior wall near service access
  • Stairs should be on an exterior wall and should be proportioned appropriately

9. Stair configurations:
• Should exit through a stair. Only exit through an end of a corridor if a secondary entrance is required in the program.
• Must even exit through stairs if near lobby doors, because code says stairs must have access to corridor at all levels, and that exit stairs must exit to grade.

   1st Floor

   2nd Floor

   Fail, can’t get under bottom right door on 1st floor level, because 2nd floor stairs minimize headroom.

   1st Floor

   2nd Floor

   Pass, can move under landings without head clearance issues. (10x20 stair)

   1st Floor

   2nd Floor

   Acceptable if stair is wide (over 8’), because could loop stair back on itself and still maintain a clear passage on main floor. 12x 18 stair

10. Wall and Door openings
• CHECK OVERLAPS FIRST!
• CHECK ALL ORIENTATION, ADJACENCIES, VIEWS, CONNECTIONS, PROPORTIONS PRIOR TO ADDING DOORS OR OPENINGS!
• Draw openings and doors last as they may not move when spaces are adjusted
• Not require to show door or wall opening in elevators walls
• Can only be drawn between circulation areas (including corridors)
• No extra exterior door to mech room unless programmed
• Exit doors should not swing into rooms. They swing out (to corridor or to outside)
• If 2 exits from a room (one goes outside and other to corridor) if both went to outside a third door to corridor would be required (wasted door).
11. Windows:
- 4-6’ long
- Rooms with views require 2 windows
- Can’t place windows in rooms next to high room and expect to look out over roof.
- Can’t put windows in rooms not requiring them, but keep out of mech, toilets, stairs, etc
- Don’t put windows in second storey space unless programmed

12. Finally, walk through your building:
- Walk from room to room to make sure each has a door from the corridor and the adjacencies and windows are there. Once again, you’ll be amazed to realize that a door/window/wall opening you had placed no longer exists, doors/visual windows still exist in a location they shouldn't because of something you relocated, rooms don't actually open to a corridor, or you never even drew the corridor (remember, it never leaves the list so that isn't helpful.)

13. Check List: - SHOULD HAVE 40 MINUTES TO CHECK!
- Site, orientation and buildable area:
  - Orientation responds to site plan – Entrance correct orientation
  - Respect buildable area and site constraints
  - Conifer trees will block views
- Visual control as required
- Corridors:
  - Simple and straight forward corridors
  - All spaces accessible unless noted otherwise
  - Size corridors at minimum size or width
- Spaces:
  - Spaces with largest # of visitors should be by lobby
  - All spaces shown
  - Spaces within area limitations

**Code Issues:**
- No dead end corridors over 20’ (confirm exam is the same)
- Dead ends should be measured 1’ into the corridor or 20’ is just marginal as noted below:
  Dead ends are measured to middle of door along a corridor.
Egress doors:
- Min. 2 egress routes from each floor
- Egress doors properly separated (1/2 diagonal distance) measured to middle of doors
- Exit stairs exit directly to exterior
- Configuration of exit stairs would not compromise head clearance if there was an actual stair
- Proper # of exits
- Proper # of stairs
- Occupied rooms don’t allow egress through another room before reaching hall

Ensure lobby is not a dead end space

Door swings
- Door swings in direction of egress (egress doors-exit doors)
- All others swing into room
- Stair egress doors may not swing into corridor
- Can swing over bldg limit line, but NOT over property line
- Swing can’t reduce exit path to less than 3’

Design Issues:
- Cantilever/overhang only permitted over entrance door (3’ max 6’wide)
- Rooms have good aspect ratio – not over 2:1
- All window and wall openings shown