



Designing a Facility That Works! A Rulebook for Facility Design

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A Rulebook for Facility Design

- Rules of Thumb
- Rules of Reality
- Rules of the Roost
- Rules of the Game Slick Ideas
- Rule of the Road









Based on national average. Your actual numbers may vary.

Rule of Thumb No. 2 Building Area = Repair Bay sf* x 2

- Determine Quantity of Repair Bays (See Rule of Thumb No. 1)
- Determine Size (sf) of Repair Bays (length x width = sf) (Also see Rule of Thumb No. 1)
- Calculate Total sf of Repair Bays
- Double Repair Bay sf to Determine Approximate Building Envelope
- Double Building Envelope to Determine Building Area



- Agency Vehicle Parking = 1/2
- Employee Parking = 1/4
- Building Area = 1/4
- Master Plan for the Future!



Based on national average. Your actual numbers may vary.



- 1 Acre = \$3,000,000 (but don't tell anybody) or
- 1 Acre = \$2,000,000 (economy version)



Based on national average. Your actual numbers may vary.



- UBC, SBC, IBC, local interpretations/adaptations
- Aisles in shop to meet exiting requirement
- Mezzanines < 3,300 sf
- Egress from pits
- Don't just meet, exceed for function
 - Plumbing fixture counts
 - Ventilation air changes
 - o Electrical outlets quantity and height
- Battery rooms





- Welding is a four-letter word
- Keep AST's & CNG equipment 50' from property line
- Sprinkler systems are good
- Fire lanes around/through buildings
- Plan for lighter-than-air fuels





- Major renovations activate ADA
- Parking spaces
- Building access
- People spaces on 2nd floor = \$75,000+
- Restrooms
- Doors
- Hallway width
- Signage
- Handrail extensions





- Pit protection
- Eye protection
- Ear protection
- Positive pressure in offices
- Clear aisles
- Clear area around electrical/mechanical equipment





- Local often exceeds Federal requirements
- Archeological/historical/cultural/wetlands
- Adjacent property impact
- NPDES Phases I and II
- Clear air/clean water
- AST/UST





- Sustainable design
- Cheap just doesn't last!
- Light/bright/hard finishes
- Exceed code ventilation requirements
- Full spectrum lighting
- Handwash facilities in shop
- Storage for portable equipment/tool boxes
- Common work area
- Drainage/flat floors
- Clean and clear = safe and efficient







- Avoid load bearing walls
- Don't plan yourself into a corner
- Locate columns for convenience
- Minimize floor obstructions
- Consider pen office workstations
- Plan for expansion of your expansion





- Lifts
 - $_{\circ}$ In-ground
 - $_{\circ}~$ Surface mounted
 - Parallelogram
 - o Portable
- Lower Level Work Area (LLWA) aka "Pits"
 - Good lighting
 - Used oil/antifreeze handling system
 - o Lubricants
 - Adjacent work area
 - Mobile work platform
- Flat Floor
 - Not all repairs need lift/LLWA
 - Saves construction costs





- Lube cubes/spill containment
- Antifreeze @ 50/50 mix
- Compressed air systems
 - $_{\circ}\,$ Compressors
 - $_{\circ}$ Dryers
 - Filter/Regulator/
 - Lubricator
 - Shut off valves
 - Runaway valves
- Piping







- Used oil
 - o Gravity
 - $_{\circ}\,$ Suction
- Used antifreeze
 - Removal
 - $_{\circ}$ Recycle





- Conventional (gasoline/diesel)
 UST/AST
 - $_{\circ}~$ Vapor recovery
 - Fuel management system
 - o Drainage
- Alternative fueling systems
 - $_{\circ}$ Compression/storage
 - $_{\circ}\,$ Dispensing







You can always make a functional building good looking, but you can't always make a good looking building functional

