



Interstitial Spaces: Design and Benefits March 2021

dauidcdixonLLC

Importance of Ceilings

- Crevices and ledges
- Condensation—18 - 22 ft minimum reduces chance of condensation by allowing better airflows under ceiling
- Cleanability and cost
- Appearance
- Lighting – reflective white ceiling reduces fixture count
- Asset utilization-maintenance and modifications can occur while room in production
- Refrigeration or HVAC – reduces room cube
- Operating cost



Good and Bad issues

Good:

- Clean
- Well lit
- Insulation on penetrations
- Sufficient clearances
- Vertical pass-through ductwork
- Fire sprinkler laterals kept high

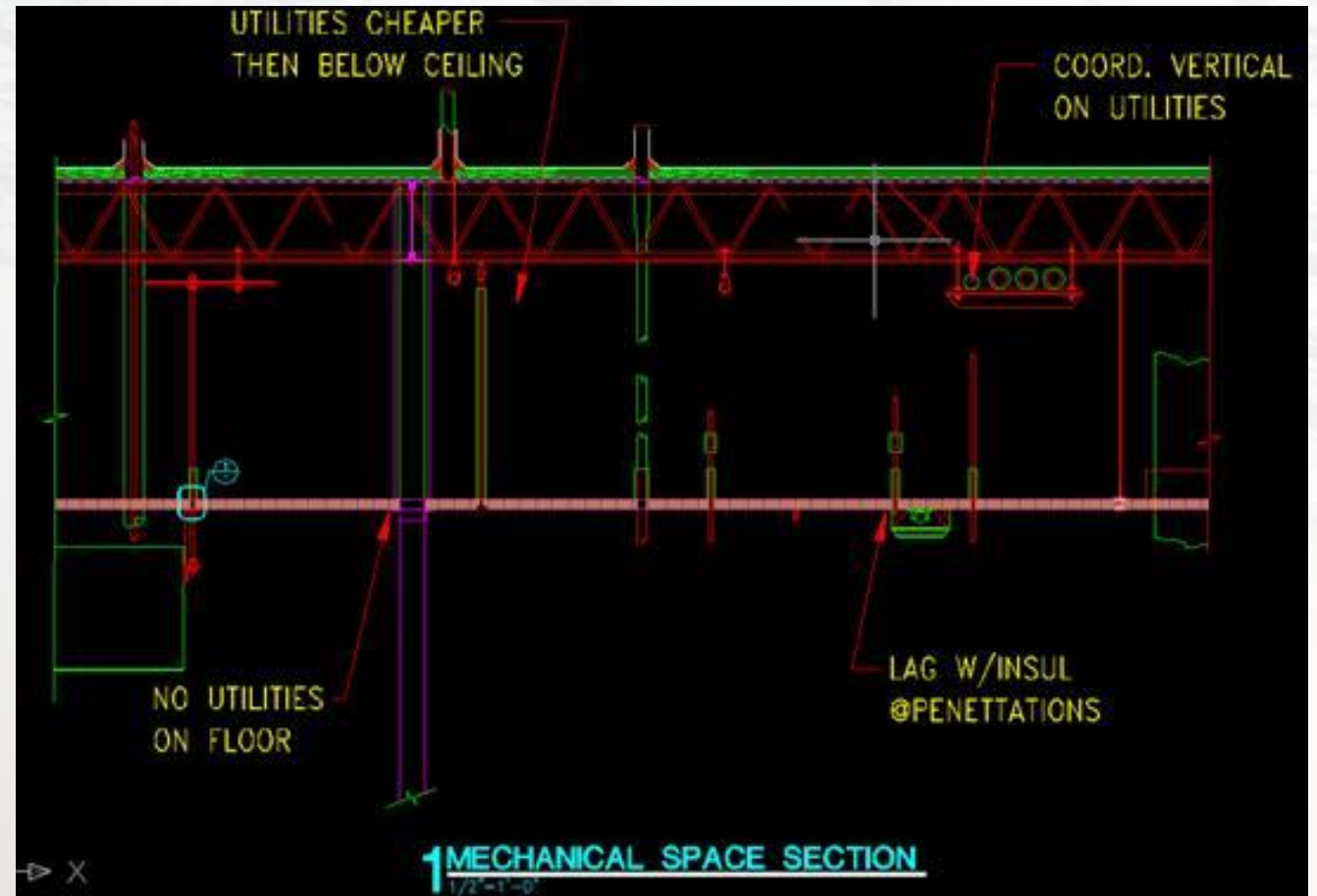
Bad:

- Need for a drip pan
- Access to pull filter basket!



Design Considerations

- Load: dead load plus 35 lb live load
- Clear height
- IMP spec
- Routing of piping
- Code
- Vapor seal inside conduits passing through ceiling
- Do not seal IMP joint from below
- Double sprinkler typically reqd
- Avoid ductwork crossing
- Avoid mechanical equipment



Benefits of Walk-on Ceilings

- Clean overheads
- Improved lighting
- Better condensation control and reduced infiltration
- Higher asset utilization — reduced sanitation downtime
- Higher asset utilization — reduced downtime for modifications
- Shorter construction – stacking trades



Risks with Renovations

- 3 ft clear to structure, 4 ft clear to deck: inadequate space.
- Unsafe
- Difficult to install, maintain and clean
- Typically a risk with renovations of a room with 18 – 21 ft clear to structure
- Rather, 26 ft clear to structure or more for greenfield construction.



Operations Impact of Walk-on Ceilings

- Cleaner room
- Shorter downtime for sanitation
- Less labor, utilities, and chemicals for cleanup
- Reduced refrigeration electrical costs
- Reduced risk of condensation and contamination
- Reduced time for maintenance and modifications
- Cost for interstitial space lighting and ventilation





Conclusion and Questions

- Installation of walk-on ceilings in food production rooms can help ensure microbiological food safety and protection from physical contamination
- This can decrease operational costs as design impacts the asset utilization and can reduce sanitation costs
- Design can create faster line changes and a more flexible food production facility