

Crosswalk of NIH's Design Requirements Manual and VA's Design Guides/Manuals

<p>This chart presents a basic crosswalk between the NIH Design Requirements Manuals (revision 3/5/2020) and VA's design guides/manuals to assist in the design and engineering of VA Laboratory Research and Veterinary Medicine Units (MVU) projects in the interim until the new VA Laboratory and Research Standards and Design Guide are published (estimated end of 2021).</p>	
<p>Notes:</p>	
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<p>4: VA's corresponding role to NIH's Project Officer (PO) is Project Manager/Senior Resident Engineer.</p>	
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<p>Applicable planning and design/engineering NIH Design Requirements Manual (DRM): Chapter/Section/Etc.</p>	<p>Comments:</p>
Chapter 2: Planning and Programming	
Section 2.2 Research Laboratory Design	
2.2.2 Modular Design	
2.2.3 Laboratory Areas	Use SEPS for VA planning/programming. Use NIH DRM for design information/ guidance.
2.2.5 Circulation Areas	
Section 2.3 Animal Research Facility Predesign	
2.3.2 Animal Research Facility Planning	
Section 2.4 Animal Research Facility Design	
Section 2.5 Biocontainment Facility Predesign	
Section 2.6 Biocontainment Facility Design	
Chapter 4: Architectural Design	
Section 4.2 Doors	
4.2.2 Laboratory Doors	
4.2.3 Animal Facility Research Doors	
4.2.4 Specialty Doors, Frames, and Hardware	
Section 4.3 Partitions	
4.3.2 Laboratory Partitions	
4.3.3 ARF Partitions	
4.5.3 Laboratory Casework	

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Applicable planning and design/engineering NIH Design Requirements Manual (DRM): Chapter/Section/Etc.	Comments:
4.5.4 ARF Casework	
Section 4.6 Furnishings and Equipment	
4.6.1.5 Transportation Route	
4.6.1.10 Chemical Fume Hoods	
4.6.1.11 Biological Safety Cabinets	
4.6.1.12 Autoclaves	
4.6.1.13 Ice Machines & Dry Ice Bins	
4.6.2 ARF Equipment & Furnishings	
Section 4.8 Loading Docks	
4.8.2 Waste-Handling Areas	
4.8.3 Animal Research Facility Loading Dock	
Section 4.9 BSL-3 & ABSL-3 Biocontainment	
Chapter 5: Structural Design	
Section 5.2 Structural Loads	
5.2.1 Loads	
Table 5.2.1(A) Minimum Live Loads for Individual Types of Spaces	
5.2.2 Vibration	
Section 5.3 Animal Research Facilities	
Section 5.4 BSL-3 & ABSL-3 Biocontainment	
Chapter 6: Mechanical Design	
Section 6.1 Heating, Ventilation, and Air Conditioning Design	

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6.1.3.1 Laboratory Equipment Cooling Loads	
6.1.3.2 Animal Room Cooling Loads	
6.1.4 Animal Population Density	
6.1.8(B) Dedicated Air: HVAC	
6.1.8.1 Design Requirements for Research Laboratory Facilities	
6.1.8.2 Design Requirements for Animal Research Facilities	
6.1.9.2 Animal Research Facility Temperatures/Humidity Levels	
6.1.11 Ventilation Rates	
6.1.12 Individually Ventilated Cages	
6.1.13 Relative Room Pressurization	
6.1.14 Air Distribution Systems	
6.1.15 Anterooms	
6.1.16 Program Equipment	
6.1.17 Environmental Rooms	
Section 6.2 Supply Air Handling Systems	
6.2.2 Ductwork Design	
6.2.3 Outdoor Air Intakes and Exhaust Air Discharge	
6.2.4.2 Air Handling Systems for Laboratory and Animal Research Facilities	
Section 6.6 BSL-3 & ABSL-3 Biocontainment	
Chapter 7: Building Automated Systems	
Section 7.2 Infrastructure	

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7.2.6 Operator Workstations	
7.2.6 (H) Animal Research Facility (ARF) Monitoring Workstation	
Section 7.3 Applications	
7.3.3 Laboratories	
7.3.4 Animal Holding Rooms	
7.3.5 General Pressure-Controlled Rooms	
7.3.6 Principal Investigator (PI) Offices	
7.3.7 Microscope Suites	
7.3.8 Nuclear Magnetic Resonance and Magnetic Resonance Imaging Suites	
7.3.9 Computer Rooms	
7.3.10 Environmental Rooms	
7.3.13 Freezer Farms	
7.3.14 Laboratory Corridors	
Section 7.4 System-Level Requirements	
7.4.10 Laboratory Air Systems	
Section 7.5 Component-Level Requirements	
7.5.14 Fume Hoods	
7.5.15 Ducted Biological Safety Cabinets	
Section 7.7 BSL-3 & ABSL-3 Biocontainment	
Chapter 8: Plumbing Design	
Section 8.1 Plumbing General Requirements	

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8.1.6 Additional Requirements for Animal Research Facilities	
8.1.8 Sanitary Process Systems and Clean Spaces	
8.1.9 Shared Lab/Clinical Crossover Spaces	
Section 8.2 Plumbing Fixtures and Equipment	
8.2.5 Lavatories/Sinks/Hand Sinks	
8.2.6 Faucets and Spouts	
8.2.10 Emergency Showers and Eyewash	
8.2.16 Lab and Animal Research Facility Equipment	
8.2.17 Lab Sinks	
8.2.18 Labware Washers and Autoclaves	
8.2.19 Incubators	
8.2.20 Fume Hoods and Biosafety Cabinets	
8.2.21 Lab Gas Turrets	
8.2.22 Downdraft/Backdraft/Necropsy/Tables, Dissection/Grossing Stations, and Equipment Served from Lab Water	
8.2.24 Lab Equipment Water/Waste Outlet Box	
8.2.26.2 Floor Drain in Laboratories: Additional Requirements	
8.2.26.3 Floor Drain in Animal Research Facilities, Additional Requirements	
8.2.26.4 Floor Drains, Trench Drains, and Troughs in Large Animal Spaces	
Section 8.3 Water Systems	
8.3.11 Additional Requirements for Animal Research Facilities	

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8.3.14 Research Equipment Water	
Section 8.4 Drainage Systems	
8.4.7 Sanitary, Lab, ARF, and Grease Waste and Vent Systems: General Requirements	
8.4.13 Laboratory and Corrosion-Resistant Waste Systems: Additional Requirements	
8.4.14 Animal Research Facility Waste: Additional Requirements	
8.4.15 pH Monitoring and Neutralization: General Requirements	
8.4.21 Sump, Sewage, and Lab Waste Pumps	
Section 8.6 BSL-3 & ABSL-3 Biocontainment	
Chapter 9: Fire Protection & Suppression	
Section 9.1 Fire Protection Systems	
9.1.4 Laboratory Fire Hazard Classification	
9.1.6 Flammable Liquid Storage Cabinets	
Section 9.5 BSL-3 & ABSL-3 Biocontainment	
Chapter 12: Special Process Piping Systems	
Section 12.1 High Purity Water Systems	
Section 12.2 Animal Drinking Water Systems	
Section 12.3 Compressed Gas and Cryogenic Systems	
12.3.1 General Design Requirements	
12.3.2 Bulk Gas and Cryogenic Systems	
12.3.3 Compressed Gas System Sizing, Components, and General Requirements	
12.3.4 Compressed Air Systems, Additional Requirements	

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12.3.5 Supply Manifold Systems	
12.3.6 CO2 Lab Gas Additional Requirements	
12.3.7 Liquid and Gaseous Nitrogen/Argon, Additional Requirements	
12.3.8 Ultra-High Purity, Hazardous, and Specialty Gas	
Section 12.4 Laboratory Vacuum Systems	
Section 12.5 Veterinary Medical Gas Systems for Animal Research Facilities	
Section 12.6 Plumbing Requirements for Specialized Equipment	
Appendix A - Biological Safety Cabinet (BSC) Placement Requirements for New Buildings and Renovations	
Appendix B - Downdraft Table Particle Capture Efficiency Calculation	
Appendix D - HVAC	
Appendix F - Room Data Sheets	
Lab Type: Laboratory Equipment	
Lab Type: Autoclave	
Lab Type: Cold Room	
Lab Type: Cleanroom	
Lab Type: Cage Wash	
Lab Type: Biochemistry/Wet Lab	
Lab Type: Tissue Culture	
Lab Type: Small Animal Procedure	
Lab Type: Small Animal Holding	

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Lab Type: Optics	
Lab Type: Microbiology	
Lab Type: Lab Supply Room	
Lab Type: Gowning BSL-3	
Lab Type: Electron Microscope	
Lab Type: Dark Room	
Appendix L - Sealant Table	
Appendix N - High Purity and Animal Drinking Water System Sanitization, Lab Testing, and Acceptance	
Appendix O - Specialty Labs	
Appendix O.2 - Electron Microscope and Nanotechnology	