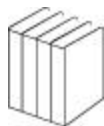


## J.1 Acronym List

above finished floor (AFF)	capital recovery factor (CRF)
acquired immune deficiency syndrome (AIDS)	carbon dioxide(CO <sub>2</sub> )
air-handling unit (AHU)	Centers for Disease Control and Prevention (CDC)
Air Moving and Conditioning Association (AMCA)	Certified Ballast Manufacturers (CBM)
alternating current (AC)	Clinical Center Complex (CCC)
Ambulatory Care Research Facility (ACRF)	cold water (CW)
ampere interrupting capacity (AIC)	color rendering index (CRI)
American Association for the Accreditation of Laboratory Animal Care (AAALAC)	common accounting number (CAN)
American Association of State Highway and Transportation Officials (AASHTO)	compressed gas (CG)
American Hospital Association (AHA)	Compressed Gas Association (CGA)
American Institute of Architects (AIA)	computer-aided design and drafting (CADD)
American National Standards Institute (ANSI)	concrete masonry unit (CMU)
American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE)	constant air volume (CAV)
American Society of Mechanical Engineers (ASME)	construction quality management (CQM)
American Society of Plumbing Engineers (ASPE)	control power transformer (CPT)
American Society for Testing and Materials (ASTM)	
American Water Works Association (AWWA)	dedicated ground riser (DGR)
American Welding Society (AWS)	dental treatment room (DTR)
animal-holding area (AHA)	deoxyribonucleic acid (DNA)
animal-watering system (AWS)	Department of Energy (DOE)
Architect/Engineer (A/E)	diagnostic and treatment (D&T)
Associated Air Balance Council (AABC)	diameter index safety system (DISS)
Association of Edison Illuminating Companies (AEIC)	direct current (DC)
automatic temperature control (ATC)	distribution duct system (DDS)
automatic transfer switch (ATS)	distributive digital control (DDC)
average water gauge (AWG)	drain, waste, and vent (DWV)
	dynamic insertion loss (DIL)
backflow prevention (BFP)	
biological safety cabinet (BSC)	electrical metal conduit (EMC)
biosafety level (BL)	electrical metal tubing (EMT)
Building and Facilities (B&F)	electromagnetic interference (EI)
Building Officials and Code Administrators, International (BOCA)	electronic data processing (EDP)
	Electronic Industries Association (EA)
	Electronic Testing Laboratory (ETL)
	equivalent linear measurement [of laboratory work space] (ELM)
	ethylene oxide [sterilizer] (EtO)
	ethylene propylene rubber (EPR)
	exhaust fan (EF)
	external manual operator (EMO)



Federal Communications Commission (FCC)  
full-time employee (FTE)

General Services Administration (GSA)  
grand fault interrupting (GFI)

halogen infrared (HIR)  
hand-off-auto (HOA)  
heating, ventilation, and air-conditioning  
(HVAC)  
high-efficiency particulate air (HEPA)  
hot water (HW)  
hot water recirculating (HWR)

Illuminating Engineering Society of North  
America (IESNA)  
indoor air quality (IAQ)  
Inter Building Closet (IBC)  
Institute of Electrical and Electronics Engineers  
(IEEE)  
intensive care unit (ICU)  
InterNational Electrical Testing Association  
(NETA)  
International Electrotechnical Commission  
(IEC)

Joint Commission on the Accreditation of  
Healthcare Organizations (JCAHO)

laboratory air (LA)  
laboratory vacuum (LV)  
Lighting Protection Institute (LPI)  
limit switch (LS)  
local area network (LAN)

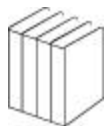
magnetic resonance imaging (MRI)  
main circuit breaker (MCB)  
main lugs only (MLO)  
Maryland Department of Environment (MDE)  
mass spectrometry (MS)  
mechanical/electrical/plumbing (MEP)  
medical air (MA)  
medical gas (MG)  
medical, surgical, and nursing (MS&N)  
medical vacuum (MV)  
Memorandum of Understanding (MOU)

mental health patient care unit (MHPCU)  
metal oxide varistor (MOV)  
metal halide (MH)  
modular building controller (MBC)  
motor control center (MCC)

National Electrical Code (NEC)  
National Electrical Manufacturers Association  
(NEMA)  
National Electrical Safety Code (NESC)  
National Fire Codes (NFC)  
National Fire Protection Association (NFPA)  
National Institute of Occupational Safety and  
Health (NIOSH)  
National Institutes of Health (NIH)  
National Institute of Standards and Technology  
(NIST)  
nitrous oxide (NO)  
noise criteria (NC)  
noise reduction coefficient (NRC)  
nuclear magnetic resonance (NMR)

Occupational Safety and Health Act (OSHA)  
Occupational Safety and Health Administration  
(OSHA)

paper-insulated, lead-covered (PILC)  
patient care unit (PCU)  
pediatric patient care unit (PPCU)  
perceived air quality (PAQ)  
personal computer (PC)  
polytetra fluoroethylene (PTFE)  
polyvinyl chloride (PVC)  
positron emission tomography (PET)  
post anesthesia recovery (PAR)  
Potomac Electric Power Company (PEPCO)  
power factor (PF)  
pressure-reducing valve (PRV)  
Program of Requirements (POR)  
programmable lighting control (PLC)  
Public Health Service (PHS)  
pulse-width modulation (PWM)



radio frequency interference (RFI)  
ratio (R-value) (R)  
relative humidity (RH)  
remote terminal unit (RTU)  
reverse osmosis (RO)  
rigid galvanized steel (RGS)  
room cavity ratio (RCR)  
room criteria (RC)

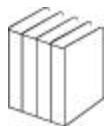
Washington Suburban Sanitary Commission  
(WSSC)  
World Health Organization (WHO)

Scientific Apparatus Makers Association  
(SAMA)  
service entrance (SE)  
Sheet Metal and Air Conditioning Contractors  
National Association (SMACNA)  
silicone-controlled rectifiers (SCR)  
smoke (SM)  
sound transmission class (STC)  
stand-alone control unit (SCU)  
standard dimension ration (SDR)

Telecommunications Industries Association  
(TIA)  
terminal equipment controller (TEC)  
testing and balancing (T & B)  
thermal manual motor starter (TMMS)  
total harmonic distortion (THD)  
transient voltage surge suppression (TVSS)

Underwriters Laboratories (UL)  
Uniform Federal Accessibility Standards  
(UFAS)  
uniform present worth (UPW)  
uninterruptible power supply (UPS)  
unit directional flow (UDF)  
unshielded twisted pair (UTP)

variable air volume (VAV)  
variable-frequency speed drive (VFD)  
variable-speed drive (VSD)  
ventilation rate (VR)  
vinyl composition tile (VCT)  
volatile organic compound (VOC)  
voltage-source inverter (VSI)



## J.2 Units of Measure

A	ampere	Pa	pascal
cd	candela	%	percent
cph	changes per hour	ppm	parts per million
dB	decibels	rpm	revolutions per minute
°C	degrees Celsius	s	second
°K	degrees Kelvin	V	volt
g	gram	VA	voltampere
Hz	hertz	W	watt
kg	kilogram		
kJ	kilojoule		
kPa	kilopascal		
kV	kilovolt		
kVA	kilovoltampere		
kW	kilowatt		
kWh	kilowatt hour		
L	liters		
L/s	liters per second		
LPM	liters per minute		
LPW	lumens per watt		
lx	lux		
m	meter		
m <sup>2</sup>	square meter		
mA	milliampere		
MCM	thousand circular mils		
mil	millimeter		
MJ	megajoule		
mL	milliliter		
mm	millimeter		
mmHg	millimeters of mercury		
mRem	millirem		
m/s	meters per second		
nm <sup>2</sup>	net square meter		



## **J.3 1996 NIH Design Policy and Guideline Founders, Contributors and Ad Hoc Committees**

The 1996 Guidelines were developed by representatives from the National Institutes of Health, as well as consultants. Members of Ad Hoc committees met over a period of eight months to develop, edit, and format the document. We thank them for their efforts and their service to the National Institutes of Health. The following Ad Hoc committees assisted in the development of the 1996 version of the Guidelines:

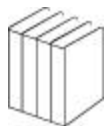
Architectural Fire Protection  
A/E Checklist Founders  
Civil Mechanical  
Contributors Plumbing  
Controls Standard Detail  
Electrical Structural  
Environmental Style and Format

### **J.3.1 1996 Ad Hoc Committee members included:**

Terry Adsit  
Kenton J. Balenske, PE  
Charles C. Barrett  
Frank A. Battistello  
Jeffrey M. Bauer, PE, CIH, CSP  
Dave Berry  
Roland Binker, AIA  
Biohaztec Associates, Inc  
Joseph M. Bladen  
Charles E. Blumberg, FIIDA  
Martin D. Borenstein, PE  
Raymond Bowen  
Nancy G. Boyd  
Clarence Brace  
Kenneth A. Brow, PE  
Ben Buck, PE  
Edward Bums  
Christine M. Campbell  
James Carscadden, PE  
Harry S. Cepura



Dr. Alan L.Chedester  
Capt. Terry L. Christensen, PE  
Christopher Cowansage  
Joseph G. Dafin, PE  
Rassa Davoodpour  
Mehryar Ebrahimi, P.E.  
Cory English  
David H. Epley, PE  
Alfred J. Ferruggiaro  
Albert P. Free, PD, CSP  
Shawn Googins  
Dan Gushing, AIA  
Paul Hawver  
Ricardo C. Herring, AIA  
Erin L. Hoke  
John K. Hollingsworth  
Paul Hudes  
Herbert B. Jacobi  
John H. Keene, DR, PH  
Frank R. Kelly  
J.P. Khoshbin, RA  
Byung Kim  
Louis Klepitch  
Frank M. Kutlak. RA  
Frank Lancaster  
Randolf Larsen  
James S. Lewis, PE  
Thomas Ligis  
Kristy Long, RA  
Johnny Madlangbayan  
Athanasia Mantzouranis, PE  
Phillip Marcus  
J. P. McCabe, PE  
Dr. Farhad Memarzadeh  
Juanita M. Mildenberg, AIA  
Wesson H. Miller, Jr., PE  
Mark F. Miller  
Jonas L. Morehart, PE  
Rand M. Mortimer



Lynn M. Mueller, RLA  
Barbara Myerchin  
Nga Nguyan  
Patricio Ochoa  
Herman M. Orrison  
Albert Parrish  
Arvind Patel  
Daryl E. Paunil, PE  
John Pavlides, PE  
Edward A. Pfister  
Leon F. Pheder, PE  
Duane S. Pinnix, PE  
Judit A. Quasney, RA  
Solange Rangel, RA  
Shahriar Saleh, PE  
Donald A. Sebastian, RA  
Cyrena G. Simons  
Justin Smith  
Hillel Soclof  
Roger Solomon  
William Strine  
Peter W. Sweeney  
Dr. James F. Taylor  
Michael S. Terpilak, CHP  
Karen D. Thomas  
E. Torkashvan  
Angela D. Watson  
Marshal White  
Gary Zackowitz, RA



## **J.4 1999 NIH Design Policy and Guideline Review, Update and Revisions**

The 1996 version of the NIH Design Policy and Guidelines were reviewed and revised during 1999 through the dedication and assistance of staff from the National Institutes of Health, Office of Research Services, Division of Engineering Services, Design, Construction and Alteration Branch, Technical Resource Group. The Chairperson of the Guideline Committee was Sushil K. Nagpaul, PE, Technical Resource Group. Subcommittees, composed of technical representatives in various disciplines, participated in the review, update and revisions. These individuals included:

Robert Beller, PE  
Charles E. Blumberg, FIIDA  
Richard Charles, PE  
Capt. Terry L. Christensen, PE  
Mehryar Ebrahimi, PE  
Prem Garg, PE  
Eric Hoover, PE  
Reza Jafari, PE  
Louis Klepitch  
Brian Kong, PE  
Thomas Ligis  
Debbi LoCicero, RA  
Farhad Memarzadeh, PhD, PE  
J.P. McCabe, PE  
Rand M. Mortimore  
Arvind Patel, PE  
John Pavlides, PE  
George Peng, PE  
Dave Rogerson  
Shahriar Saleh, PE  
Glen Stonebraker  
John Vilgos, PE

