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## ACRONYMS & ABBREVIATIONS

This list includes only those acronyms and abbreviations that relate specifically to the building industry. Refer to a dictionary or Wikipedia for other terms that may be unfamiliar.

ABAA	Air Barrier Association of America
AC	air conditioning or alternating current
ACCA	Air Conditioning Contractors of America
ACEEE	American Council for an Energy-Efficient Economy
ACH	air changes per hour
ACH <sub>50</sub>	air changes per hour at 50 Pascals pressure
ACHNAT	natural air changes per hour
AFUE	annual fuel utilization efficiency (for furnaces and boilers)
AL	air leakage (windows)
ASHRAE	American Society of Heating, Refrigerating and Air-conditioning Engineers
AWEA	American Wind Energy Association
BIBS	blow-in-batt system
BIPV	building-integrated photovoltaics
Btu	British thermal unit(s)
CABEC	California Association of Building Energy Consultants
CAE	combined annual efficiency (for combination water and space heaters)
CDC	Centers for Disease Control
CDD	cooling degree days
CEA	Certified Energy Analyst
CEDIA	Custom Electronics Design and Installation Association
CEE	Consortium for Energy Efficiency
CEPE	Certified Energy Plans Examiner
CFL	compact fluorescent light
CFM	cubic feet per minute
CMHC	Canada Mortgage and Housing Corporation
COP	coefficient of performance (for heat pumps)
CPU	central processing unit
DC	direct current
DHW	domestic hot water
DOE	US Department of Energy
EBN	<i>Environmental Building News</i>
EEBA	Energy & Environmental Building Association
EER	energy efficiency ratio (for heat pumps)
EF	energy factor (for water heaters and dishwashers)
ELA	effective leakage area (for buildings)
EPA	US Environmental Protection Agency
EPS	expanded polystyrene

GHG	greenhouse gases
gpf	gallons per flush
gpm	gallons per minute
GSHP	ground-source heat pump
HDD	heating degree days
HERS	Home Energy Rating System
HSPF	heating seasonal performance factor (for heat pumps)
HVAC	heating, ventilation, and air-conditioning
IBACOS	Integrated Building and Construction Solutions
ICF	insulating concrete form
IDA	International Dark-Sky Association
kW	kilowatt
kWh	kilowatt-hour
LED	light-emitting diode (lighting)
LEED	Leadership in Energy and Environmental Design
Low-E	low-emissivity (glass, windows)
M&V	measurement and verification
MEF	modified energy factor (for clothes washers)
MEP	mechanical-electrical-plumbing (consultant)
MMBtu	million Btu
NACH	natural air changes per hour
NESEA	Northeast Sustainable Energy Association
NFRC	National Fenestration Rating Council
NREL	National Renewable Energy Laboratory
NZE	net-zero energy
NZEH	net-zero energy home
OOO	ongoing ownership and operating (costs)
OSB	oriented-strand-board
Pa	Pascals
PBB	polybrominated biphenyl
PBDE	polybrominated diphenyl ether
PEX	cross-linked polyethylene (piping or tubing)
PG&E	Pacific Gas & Electric Company
PIER	Public Interest Energy Research (State of California program)
PPA	power purchase agreement
PV	photovoltaics
QII	Quality Insulation Installation
quad	quadrillion Btu
R, R-value	thermal resistance; inverse of U
REC	renewable energy credit
RFP	request for proposals
RFQ	request for qualifications
RoHS	Restriction of Hazardous Substances (EU directive)
SEER	seasonal energy efficiency ratio (for heat pumps)

SHGC	solar heat gain coefficient (for windows)
SLA	specific leakage area (for buildings)
SMUD	Sacramento Municipal Utility District
TDV	time-dependent valuation
TVIS	visible transmittance
U, U-value, U-factor	inverse of R; thermal conductance
UAS	utility allowance schedules
UL	Underwriters Laboratories
URL	universal record locator (website address)
USGBC	US Green Building Council
VMT	vehicle miles traveled
VOCs	volatile organic compounds
VT	visible transmittance
W	Watt
WEEE	Waste Electrical and Electronic Equipment (EU directive)
WF	water factor (for clothes washers)
WFA	window-to-floor area (ratio)
XPS	extruded polystyrene
ZEB	zero energy building
ZEH	zero energy home

# Foreword

If you are with me on this page, I think four things are true:

- You love the written word.
- You always seek insight.
- You cherish the Earth and the amazing way it works.
- You also read – in addition to forewords – the prefaces of books.

These are four things I love about the author, Ann Edminster, as well. Ann writes because she feels compelled to and because she loves to. As you read this book, you will feel both the urgency and the beauty of her words – clean, concise lines that cut to the core of the matter.

Ann writes with insight, and in my view, insight is what distinguishes mere information from knowledge, particularly practical knowledge. Ann writes from experience with energy-free homes, both her own and those of her clients. One of her strengths as an author is her readiness to distinguish between her own expertise and that of others; you will see this in the quotes, “guest” content, and references that round out her book.

In *Energy Free*, you will see Ann’s passion for understanding buildings and the ways they can lighten the load they, and we, place on our Earth. Although Ann has written *Energy Free* as a technical guide, she also is on a mission. Ann writes to right the way we design, build, and run our homes.

Some forewords tell you a lot about the content of the book; this one does not need to, because Ann has treated her preface the way she treats everything she does – thoroughly, comprehensively, logically. Although I honestly do not know this, I would bet that Ann wrote the preface as her own sort of double-check, making sure she has given you full value on all aspects of *Energy Free* homes. Ann leaves blessed few loose ends or stones unturned in her work; *Energy Free* is certainly no exception.

So this foreword will conclude with a short story about Ann, giving you (that special reader who actually reads forewords) extra insight into Ann’s character and how it sets the tone for all the work that she does.

Several years ago, Ann and I started work together on a number of projects based in California, meaning lots of time away from my home and family in Vermont. Without the slightest hesitation, Ann opened up her heart and home on my every visit, weaving me into both the personal and the professional fabric of her life. Did this make us better suited to the systems-thinking and integration our projects required? Do people who trust and enjoy each other's company make for a stronger professional team?

I think so. I think this same combined personal and professional commitment shines through in her new book, *Energy Free*. I hope you enjoy reading it as much as I know she enjoyed creating it.

– Peter Yost  
Building Green, LLC