Notes from LEED-NC v2.2 Exam

September 2007 Edition

Disclaimer: questions may differ than what I had, this is just a brain dump of things I could remember and may not include everything you will encounter so the best strategy is to know all the material, everything. The test is very difficult and they pull information from everywhere and anywhere. The best resources in my opinion include studying the USGBC.org website and the LEED Reference Guide, only use the Rating System once you've read through the full guide. At the end I've listed some other resources

Notes: As of mid-September 2007, the required optimized energy performance credits are NOT reflected as prerequisites on the exam yet. Be vary wary of studying v2.1 material as a significant number of things have changed in v.2.2 The exam is 80 questions and you are given 2 hours to complete it, scored from 125-200 points, a 170 is minimum required to pass. Good luck!

A couple questions on the prerequisites, each were worded differently (know what the sentence form of commissioning is). The following are examples of the answers for which one's are prerequisites, etc.

(a) ASHRAE 90.1
(b) ASHRAE 62.1
(c) Verify that the building's energy related systems are installed, calibrated and perform according to the owner's project requirements, basis of design, and construction documents.
(d) Erosion and Sedimentation Control Plan

Know that (c) is the same thing as Fundamental commissioning.

Know which credits use some form of baseline and what those points or percentages above baseline are -- a minimum measurement for a standard (water use, energy model, energy use baseline, etc)

Baseline for WE 3.1 / WE 3.2 = 20-30% reduction in water use baseline from Energy Policy Act-1992
Baseline for EA pre 2 = (min. level of energy efficiency) that complies with Appendix G of ASHRAE 90.1
Baseline for EA 1 = use calc'd baseline from EA pre 2
Baseline for EA 6 = electricity use = annual electricity use calc. From EA 1 or use the DOE CBECS (also used in EA 2)

A couple questions regarding recycling, know pre-consumer vs. post-consumer, specifically what qualifies as pre-consumer recycled content (waste from manufacturing ONLY if reclaimed in same process, does not count if it's sold, etc..)

Know what materials are allowed for the recycling prereq.

Know the difference between Building Reuse, Material Reuse, Salvaged Material, Regional Materials, and Recycled Content -- Be prepared to be given an example (story of a project) using all of the above and to apply the appropriate credits.

MR Construction waste management, know exactly what is accepted to be reused/recycled and what cannot (soil & land clearing debris cannot contribute). Know the process / strategies.

Building Reuse, know what counts as reuse and what doesn't. (what part of the building can be applied to which credit), know the exemptions (non-structural roof & windows, etc…)

For building reuse, know what qualifies and what doesn't towards the percentage

Know what credits require to know FTE for calc's

Know the volume of air required to flush out for EQ 3.2

Know the four major ASHRAE standards (90.1, 62.1, 52.2, & 55) and what credits they are applied to

Know strategy of SS8 (full cutoff luminaries, occupancy sensors to turn off light after hours, etc)

KNOW PERCENTAGES (know what the percentages are, very often they will try to confuse you with similar percentages or multiple percentages, like 2% glazing factor for 75% of space, direct line of sight for 90%, so the answer was 2%,75%,90%, other answers may have been 1%,75%,90% or 2%,70%,90%)

Furniture can be included if it is applied consistently to all calc's in MR3-7

Study the commissioning process, both the prerequisite and the credit. Know how they differ. Know the process and steps involved. Know the roles & responsibilities involved. Know what equipment is checked for efficiency.

Know what bldg. maintenance engineers need to do (adjust for thermal comfort, adjust CO2) versus commissioning, versus measurement & verifying.

Know about the process for certified wood, specifically the submittal and chain-of-custody.

Know the differences between green-e, Green Seal, Green Label, and Green Spec

Know difference between green power vs. on-site renewable energy. Know what third-party certifies green power (green-e), and what's allowed to contribute to each. Hydropower does not count. (only low-impact hydro). Also know what qualifies for on-site renewable energy (mostly active, no passive)

Know what's a renewable resource (wool, cotton, linoleum, cork, wheatboard, etc.)

Know what time frame to MV (when to start and when to verify, after 2-week flush to 1-yr)

Know CIR, process involved and submittals involved.

Know what ventilation is (natural, mechanical, outdoor air mixed with recycled air, etc)

Construction IAQ management plan, know what GC is responsible for (strategy & submittals) and know what MERV filters are for what credit
EQ3.1 MERV 8
EQ3.2 MERV 13
EQ5 MERV 13 – indoor chemical & pollutant control

Know the third-party standards for low-emitting materials and what falls into what category. You do not need to know specific VOC levels.

Couple questions on LEED AP role, what they should know, what needs to be submitted for ID2, etc.

Know the difference in calculation method and strategies for EQ 8.1 versus 8.2

SS6 – A couple questions regarding innovative storm water SUBMITTALS & CALC's, know pre-development runoff & post-development runoff and know when to use it based on EXISTING imperviousness

Know the certification process, know the design phase process for submittals & templates, know the construction phase process for submittals & templates.

Know who is allowed to be Cx (commissioning authority)

Know the definition of what type and size of building would be LEED-NC certified. (vs. existing, CI, etc.)

The one calc I had asked for daily water use of an occupant for use in water reduction. You may not need to know the exact calculation, but numerous questions regarding what values were required to perform the calculations.

Asked straight forward questions about the requirements for the following credits:

SS4.2/4.3 SS5.1/5.2 SS7.1/7.2 EQ7.1/7.2 EQ8.1/8.2

Know the details of how one point differs from another point in the same credit (see credits in list above).

Know and understand the strategies that can be implemented to obtain multiple points. (Vegetated roofs, white-roofs, etc.)

Notes from LEED-NC v2.2 Exam

September 2007 Edition

Multiple questions regarding ID points, innovative / exceptional design requirements, this is where they get you if you don't know the percentages (and when to double vs. next increment)

Know everything about WE, I had 6-8 questions regarding WE, know that it's the only category that can be fully submitted in the design phase.

Know purpose and when to use baseline and design energy model.

Know what strategies impact design energy model (Vegetated Roof, Daylighting. etc)

Know what requirements use – "for greenfiled sites" vs. "previously developed sites"

Referenced Standards:

ASHRAE 90.1:	Energy Standards	SSc8	EAp2	EAc1	EAc2
ASHRAE 52.2:	Ventilation Filters	EQc5			
ASHRAE 55:	Thermal & Humidity	EQc3.1	EQc5		
ASHRAE 62:	Minimum Ventilation	EQp1	EQc2	EQc6.2	
ASHRAE 129:	Air Exchange				
ASHRAE Advanced Energy Design Guide for Small Office Buildings 2004				EAc1	
ASTM (various): Solar Effects on Surfaces		SSc7.2			
Energy Policy Act 1992		WEc3			

Green-e	Center for Resource Solutions (CRS) qualification standard for what's acceptable source for green power	EAc6
Green Seal	standards for low VOC adhesives (GS-36), paints (GS-11), Anti-corrosive paints (GS-03)	EAc4
Green Label	standard for low-VOC carpet	EAc4
Green Spec	sustainable specifications	
U.S. DOE CBECS (CBECS)	survey database to determine baseline electricity use Commercial Buildings Energy Consumption Survey	EAc6, EAc2
FSC	Forest Stewardship Council (provide principles & criteria for certified wood)	MRc7
IPMVP	International Performance Measurement &Verification Protocol	EAc5

Online Resources:

USGBC	http://www.usgbc.org
LEEDstudy.com	http://www.leedstudy.com/
AREforums	http://www.areforum.org/forums/forum12/
University of Florida	http://www.cce.ufl.edu/LEED/
LEED education	http://www.leededucation.com/
Flashcards	http://ppi2pass.com/ppi/PPIShop?pr=LDNCFL&ct=LEED
	http://leedsource.com/

A great summary table for 2.2 credits, intents, requirements, strategies, submittals, phase, etc.
http://www.leededucation.com/LEED_2.2_Summary%5b1%5d.pdf