

Building a Green Veterinary Practice

Matthew Rooney, DVM, MS, DACVS
Surgical Specialist and Practice Owner

Colorado Veterinary Medical Association





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Building a green clinic is daunting. Look for the long-term goal financially and environmentally.

We'll start from the ground up...

Aspen Meadow
Veterinary Specialists
104 S. Main Street
Longmont, CO 80501
aspenmeadowvet.com



1st Year Results

- Save 35% on electrical bill
- Save 50%+ on water bill
- Save 40% on Gas bill

- Impossible to say how much I spent in greening building
 - Did not get prices for non-green options
 - Spent 120/s.f. costs on buildout

The Team

- LEED (Leadership in Environmental Engineering and Design) consultant. Cost 15k in 2008.
- Experienced architect + Gen Contractor.
 - Hire before start process?
- Staff- include your staff in the decisions- for function and green-ness

The Team

- “Build smart and green does not cost more”
- “Going green can cost some more but savings offset costs over time”
- Industry is new enough that opinion over fact dominates
- Ask for multiple options/solutions for each area of the build: HVAC, flooring, countertops, etc
 - Cheap, medium and expensive options.
 - Greenish, green, very green options
- When interviewing- beware of greenwashed companies

How Green?

- Smart building is green but not necessarily need LEED.
- Combining medical veterinary needs with green is difficult and can be costly.
- Be careful of over-achievement thinking. Be realistic and practical.
 - Do as I say... not as I did...

LEED 'Game'

- LEED consultant. Cost 15k 2yrs ago.
 - experienced architect + Gen Contractor.
- How green do you want to be? Basic to Platinum
- Smart building is green but not necessarily need LEED.
- Marketing benefit of LEED/Green, esp general practice
 - I had some national press and now lecture at AVMA, AAHA...

Vet-Green Concepts

- Vet Clinic design- “always design bigger for expansion”
- But be smart about it: McMansion vs small home
 - Smart design does not need extra space.
 - Dual purpose rooms whenever possible
 - Laundry/patient kitchen; conference room/break room; kitchen/hallway
 - Design with the expansion in mind [2 floorplans]:
 - where will new rooms, hallways be located?
 - What needs expansion: runs, cages, dental, procedures, etc?

Site Decisions

- Regional + Local Environmental concerns
 - Colorado is water limited
- Addition, move to existing building remodel or ground-up?
- We purchased car dealership-
 - Salvaged materials and saved 70+% landfill
 - Reused Windows, walls, insulation, doors, roof, etc.
 - Sold Craig's list, scrap metal, local people, etc



Design Green/Efficiently

Spaces can have 2 or more functions

- Break room and CE room
- Put staff kitchen in oversized hallway
- Library is also a staff comfort room: private conversations, need private time, etc
- Laundry, patient kitchen, + Cat ward [facing Laundry]

Shared space (promotes team culture): workstation pods, doctor offices, administration

Structure

Flooring & Flooring Base

- Use tiles made of 100% recycled materials.
- Carpeting: very green industry.
 - AMVS uses 85% post-consumer recycled carpeting.
- Poured Epoxies- high VOC's
- Try using all recycled concrete for basefloor
- Some green flooring products are untested in Medical situations
 - Marmoleum? Some feel very good while others not.

Structure

Many structural green options ultimately result in better clinic function.

Walls

A little added insulation can go a long way. AMVS' insulation is 2.5x that which is required by ASHRA.

- Limits heating and cooling needs
- Reduces noise travel
- Minimal additional cost

Use low VOC wall paint and primers. Simple accent colors can make your spaces stand out.

Structure

Laminates & Countertops

- Countertops:
 - Recycled materials- glass, stone, etc
 - Local stone
 - new options always coming to the market
- Millwork options:
 - FSC laminate millwork
 - Plastic foam molded medical cabinets- long lifespan. No trees but petroleum based.

Structure

Framing & Finish Materials-

- Forest Stewardship Council (FSC)-certified wood is a great option and makes up most of AMVS. All wood is FSC.
 - The wood is certified as sustainably harvested, processed, and grown.
- Doors and cabinetry from both old and new clinic can be salvaged, repurposed, recycled, or sold.

Structure

Lighting

Switch from T12 to high performance T8
Fluorescents

- T8s have 3-4x the life of the T12.
- T12s are also generally 4 bulbs per panel, whereas T8s only 2.
- Greater T8 bulb cost makes the switch seem costly, but the above factors recover the cost.

LED lighting is becoming affordable and more popular. More efficient than Florescent

Structure

Lighting

Numerous skylights were built into the roofing elements at AMVS. These allow natural lighting both in treatment and lobby areas, and reinforce the outside inside a truly green business.

Passive solar gain if possible. AMVS' 12 windows on both the south and west facades reduce energy needs for the building.

Structure

Roofing & Future Expansion

- A 6cm white membrane was installed onto AMVS roofing to deflect heat
 - School buses now have white roofs
- Set up to install PV solar panels at a later date
- Photovoltaic system- not feasible but if was 10miles away 70% rebate!

Environmental Systems

Noise Control

A white noise abatement system is used throughout the facility. Potentially, this is the first time a system like this has been used in a vet setting.

Added insulation helps curb noise and heating issues. In veterinary facilities painful patients, distraught clients, and triage can cause significant noise which can affect both patient recovery and client experience.

Environmental Systems

HVAC Options:

- **Geothermal**
- **Passive solar with biomass- heating only**
- **Efficient HVAC units- endless options**
- **Evaporative cooling- Cooling only**

Rem: 1. Clean air [air exchange] is an important component of your system.
2. Insulation as well.

We used Efficient HVAC, passive solar and 2-2.5x required insulation.

Environmental Systems

Control your air supply at the click of a button.

HVAC system

Website controlled with floorplan of our building

- Allows some diagnostics + repairs to be done remotely
- Allows graphing for CO₂, air exchange rate, temp ranges, humidity, etc
- Provides unsurpassed 'tweaking' of the system to maximize efficiency
- OOPS!!! Overengineered Cost!

Environmental Systems

HVAC Energy Recuperation Unit saves AMVS about 70% in energy.

- This system heats or cools the new incoming air with the old outgoing air.
- Very efficient energy usage

Overall building ventilation for AMVS is 30% above ASHRA requirements.

Special Features

Increase your client experience & open up a discussion about being green

Lobby

Coffee, tea, and other beverages can improve your client's experience, and also open up the recycling discussion.

Place a waste station with composting, recycling, and trash next to your lobby 'bar.'

Have educational displays about the green building, double flush toilets, etc. [LEED requirement]

Special Features

Bathrooms & Water Consumption

- Low flow water fixtures alongside dual flush toilets can save anywhere from 30-50% in water
- Dual flush toilet uses .8 gallons for liquids and 1.6 for solids vs. 2.9 gal/flush
- Post signage to educate clients as to how to use the differing toilets and the consumption each creates.
- Solar water heater possible.
- Grey water systems for kennel, run and cage cleaning.



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Special Features

Laundry: Purchase high efficiency, EnergyStar rated

- Front load washers: efficient and use less water + detergents
 - Spin cycles 1200rpm+ = laundry almost dry
 - Pack in "35 towels"
- Use fleece bedding for patients- come out of wash literally almost dry
- New Dryers on the market can sense when your load is dry and save significant energy.
- Buy 3yr commercial service contract and replace them afterwards. [best Buy]

Special Features

Continuing Education & Break Room

- Holding CE's in-house saves staff travel funds, and reduces carbon emissions.
- A general conference area improves both client and DVM relations.
- Provide it free of charge to animal related groups- [marketing benefit]
- Planned future expansion into it: CT, MRI etc



Special Features

Exterior Features

- Outdoor lighting should also have sensors for turning both on and off, and should not disturb local and natural surrounding habitats.
- Xerioscape your exterior clinic area with plants that will thrive in your specific climate
- Drip watering system
- Use fake grasses: easy cleaning/disinfecting and always green and thick.



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Resources

- Aspen Meadow Veterinary Specialists
aspenmeadowvet.com/resources.html
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- Leadership in Environmental & Energy Design (LEED) usgbc.org
- Partners for a Clean Environment (PACE) bouldercolorado.gov/www/pace/index.html
- 1% for the Planet onepercentfortheplanet.org
- Community Energy communityenergyinc.com
- Ecocycle ecocycle.org
- EcoProducts ecoproducts.com
- Pedro's Planet pedrosplanet.com

Questions?

Matthew Rooney, DVM, MS, DACVS

Aspen Meadow Veterinary Specialists

Alpenglow Veterinary Specialty and Emergency Center

p (303) 678-8844 | f (303) 678-8855

mrooney@aspenmeadowvet.com

Aspenmeadowvet.com

