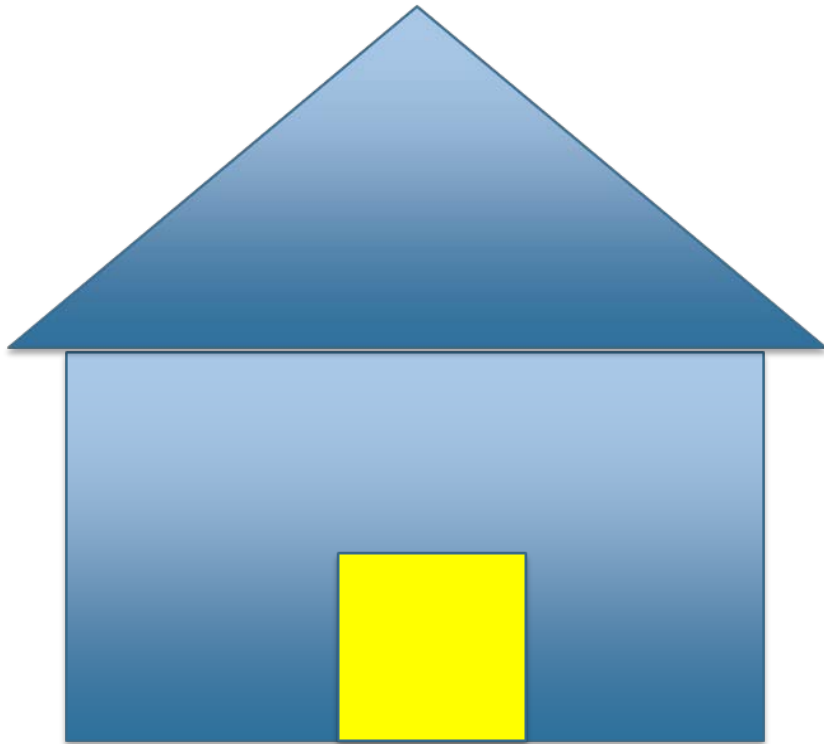


Design for Health: Building Welfare into Shelter Construction





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THANKS!

**TO THE ASPCA FOR THE PARTNERSHIP WITH UC DAVIS THAT
MADE MY POSITION AT UC DAVIS POSSIBLE SINCE 2009**



Natural Behavior



Natural Behavior



Abnormal Behavior

Red Flags



URI and Housing



What really matters?

- Appearances
- Space quantity
- Space quality
- Separation for rest, food, elimination
- Enrichment
- Hiding places
- Elevation
- Limits on stressors
- Light
- Light cycles
- Predator / prey relationships
- Flexibility of space
- Cleaning
- Isolation / separation for sick animals
- Temperature
- Air quality
- Fresh air
- Noise
- Activity
- **Safety**

The Five Freedoms

- **Freedom from Hunger and Thirst** - by ready access to fresh water and diet to maintain health and vigor.
- **Freedom from Discomfort** - by providing an appropriate environment including shelter and a comfortable resting area.
- **Freedom from Pain, Injury or Disease** - by prevention or rapid diagnosis and treatment.
- **Freedom to Express Normal Behavior** - by providing sufficient space, proper facilities and company of the animal's own kind.
- **Freedom from Fear and Distress** - by ensuring conditions and treatment which avoid mental suffering.

The Shelter Standards Project



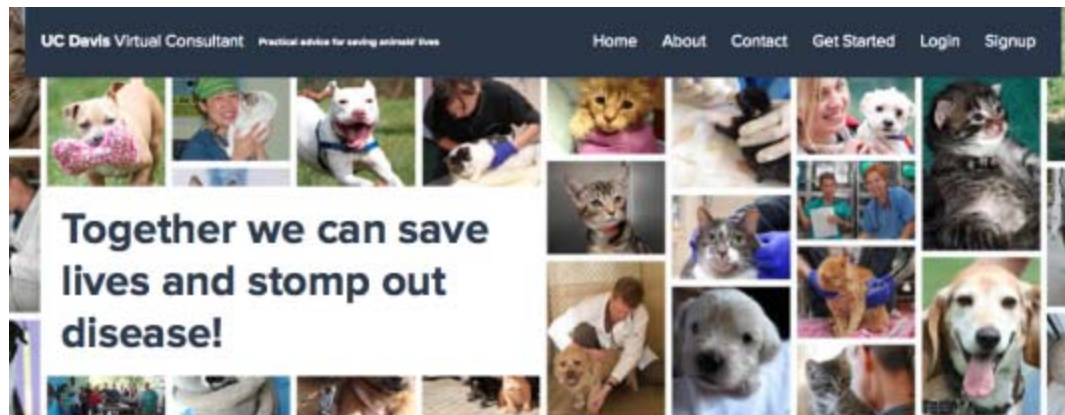
Guidelines for Standards of Care in Animal Shelters

The Association of Shelter Veterinarians • 2010

Authors:

Sandra Newbury, Mary K. Blinn, Philip A. Bushby, Cynthia Barker Cox,
Julie D. Dinnage, Brenda Griffin, Kate F. Hurley, Natalia Isaza, Wes Jones, Lila Miller,
Jeanette O'Quin, Gary J. Patronek, Martha Smith-Blackmore, Miranda Spindel

Virtual Consultant



The UC DAVIS Koret Shelter Medicine Program Virtual Consultant helps animal shelters to easily assess their everyday practices to protect animal health, support animal welfare, and save animals' lives.

EASY TO USE

- Surveys by topic
- User friendly vocabulary
- Go at your own pace
- Save and come back later
- Personalized reports give resources to help make positive change
- Private; only you can see your responses

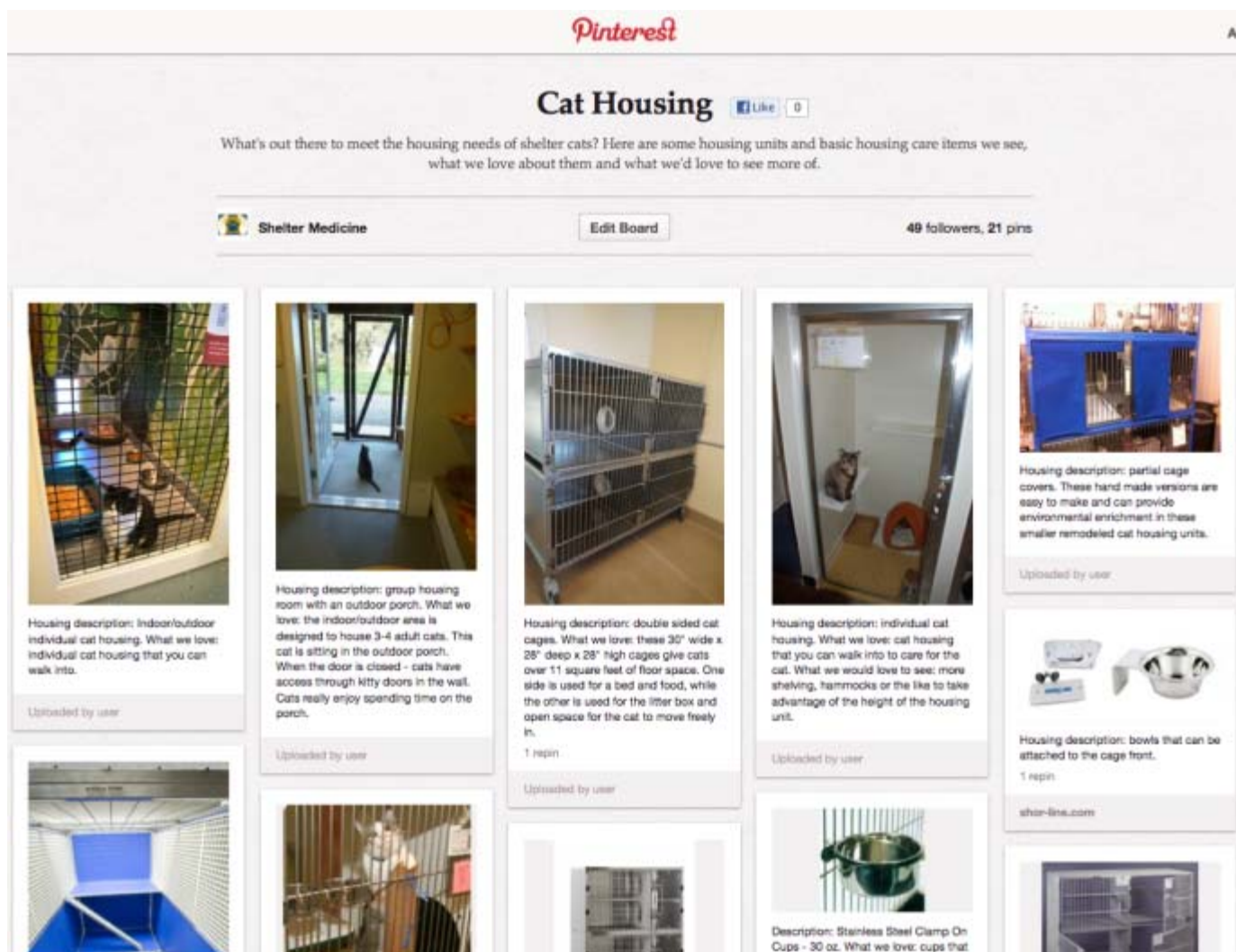
FREE TO USE

- 100% free access for everyone
- Available to shelter staff and volunteers
- Available to shelter veterinarians and consultants
- Accessible 24/7
- Even when live consultants are trying to sleep

Get Started »

<http://virtualconsultant.sheltermedicine.com/>

Check Out our Pinterest Site



<http://www.pinterest.com/sheltermedicine/>

“Room for Recovery”



Illustration: Lobulo Design

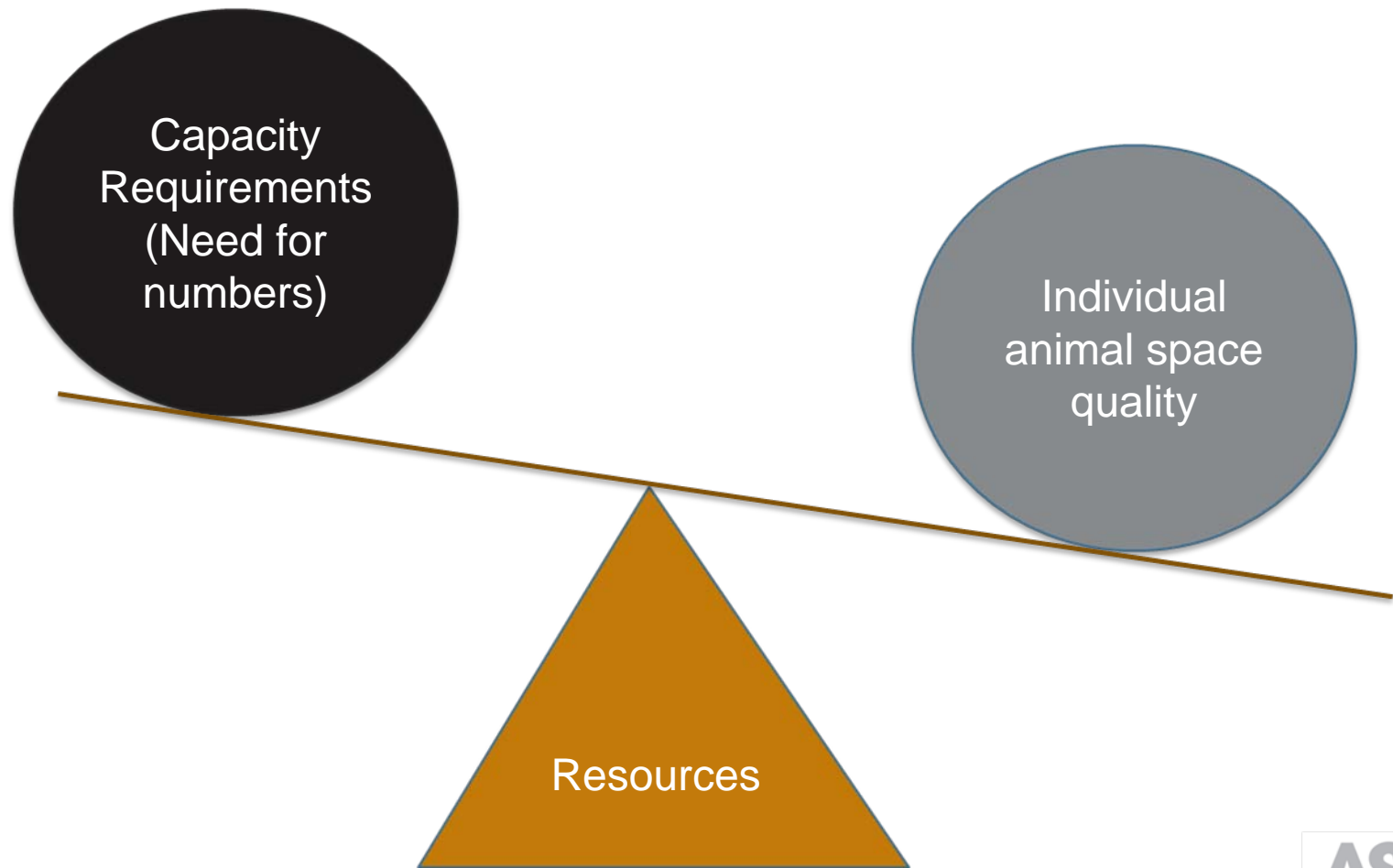
http://www.oprah.com/health/Hospital-Room-Design-Better-Hospitals-Hospital-Room-Recovery_1

Poll Question – Answer in the Chat

What gets in the way of dream housing in your shelter?

- A. Not enough money
- B. Not enough space
- C. Worries about infectious disease
- D. A and B
- E. Other

Balancing Capacity Requirements With Space for Enough Animals



Length of Stay Matters

Acclimation is faster
Adoption is faster
Care is better



When the number of animals present each day fits your
Capacity for Care (C4C)

Enclosures that Reduce Stress and Meet Animal Needs



Setting Up for Daily Care

Low Stress “SPOT” Cleaning

- Plan for SPOT cleaning
- Set up housing so cleaning can happen with minimal disruption
- Allows environmental familiarity
- Minimize exposure /transmission
- Saves time
- Thorough disinfection between animals



Spot Cleaning

- Goal is to keep space pleasant for the animal with minimal disruption
- Commonly confused
- No spraying
- Leave bedding and other items in place whenever possible
- Special considerations for cats in small cages



Spot Cleaning for Dogs



Programmatic Effects



The ASV Guidelines in **Real Life**

Part Two: Serving Up Enrichment
to the Dogs at the Austin Humane Society

BY SANDRA NEWBURY, D.V.M.



- Walking programs
- Marker training
- Tricks training
- Feeding programs
- Reading
- Play and enrichment programs



Karen Pryor clicker training

<http://www.clickertraining.com/node/1776>

Space Quantity

Space Quantity



Freedom to Express Normal Behavior - by providing sufficient space, proper facilities and company of the animal's own kind.

Freedom from Fear and Distress - by ensuring conditions and treatment which avoid mental suffering.

Primary Enclosure: Size

Normal postural adjustments

- Turn freely
- Stand easily
- Sit
- Stretch and extend their limbs
- Move their head, sit, and stand without ears touching the top of the enclosure
- Hold tail erect
- Posture comfortably for eating drinking, urination, and defecation



Outcomes Based Assessment



Environmental and Group Health Risk Factors for Feline Respiratory Disease in Animal Shelters

UC Davis URI Project- Enrollment Questionnaire

17. For a typical healthy cat please estimate the number of moves into a different cage either in the same room or into a different room during the first week of stay? (Do not include moves in and out of the same cage.)

☐ No moves occur. Cat remains in same cage, room/area from intake through day 7.

☐ 1-2 moves

☐ 3-4 moves

☐ > 4 moves

Other (please specify) _____

18. For a typical healthy cat, please estimate how many times it gets moved out and back into its cage for cleaning, socialization, assessments, etc during its first week in the shelter. (Do not include the moves to a new cage. Do not include moves from one side to the other of a double sided cage.)

☐ None

☐ 1-2 moves

☐ 3-4 moves

☐ 5-7 moves

☐ >7 moves

Other (please specify) _____

19. Select enrichments included in cat cages for the first 7 days of shelter stay? (Select all that apply)

☐ Shelf

☐ Soft place to lie on

☐ Toys

☐ Scratching area/post

☐ None of the above

☐ Other _____

Other (please specify) _____

Page 7

UC Davis URI Project- Enrollment Questionnaire

20. Litter box size in inches?(If several different litter box sizes please give size of litter box used in housing area for first week of stay).

Length _____

Width _____

Height _____

21. Do cats in cages have 3 feet distance between litter box and food?

☐ Yes

☐ No

Other (please specify) _____

22. When cats are handled what precautions are taken (on routine basis) to decrease the spread of infectious disease? (Select all that apply)

☐ Individual use gloves changed per individual cat

☐ Individual use clothing changed per individual cat(gown etc)

☐ Clothing(gown etc) used in individual room or area.

☐ Use of hand disinfectant or washing hands after each individual cat is handled

☐ Use of hand disinfectant or washing hands when leaving individual room or area

☐ None

☐ Other _____

Other (please specify) _____

23. Name and active ingredient of disinfectant(s) used to clean cat cages(Ex: Trifectant, potassium peroxymonosulfate)

24. In general what are your daily cleaning procedures of cages housing cats?

☐ Thorough cleaning, cat is moved to new cage

☐ Thorough cleaning, cat is moved back into same cage

☐ Spot cleaning

☐ Other _____

Other (please specify) _____

25. Describe your cleaning protocol for cat cages or email your cleaning protocol.

Page 8

49 questions including cage size, material and number, hiding place, handling, infectious disease control, vaccination, feeding, timing of S/N, air quality, natural light, dog exposure

After all that, what mattered most?

Greater than 9 square feet of floor space but not 6-8 compared to < 6

Limited movement in first 7 days

All large cages were compartmentalized

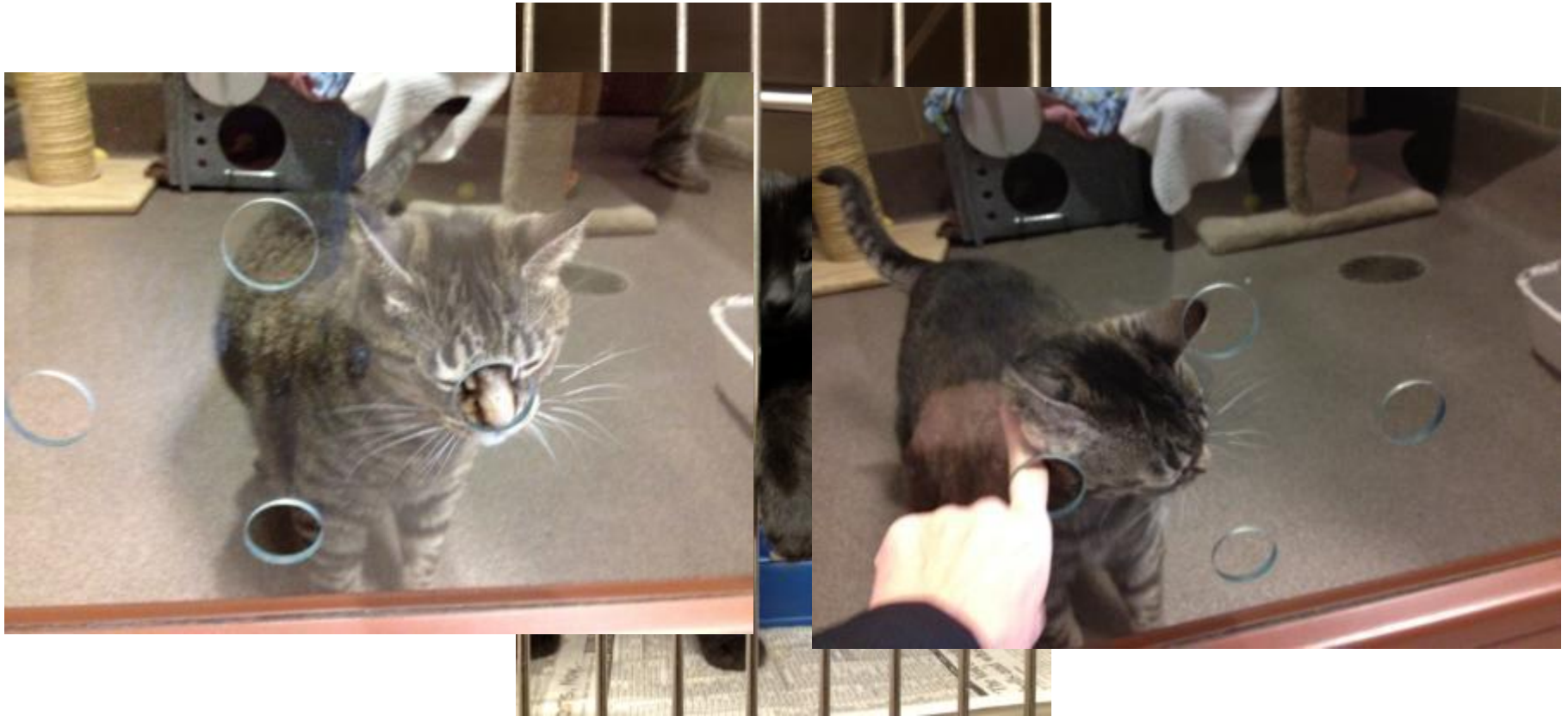
Poll Question – Answer in Chat

Do you feel like your housing units are big enough?

- A. Way too small
- B. Almost big enough
- C. Luxurious
- D. Some yes / some no

Space Quality

Allow Human Interaction



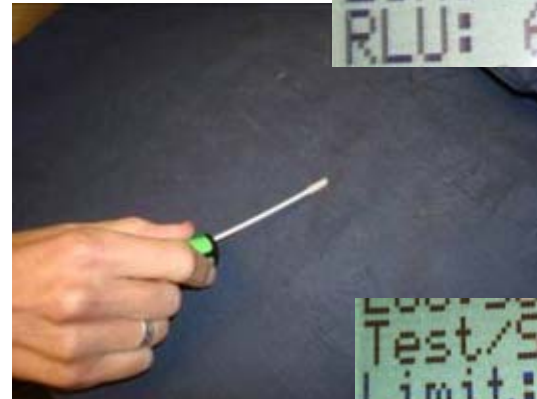
No hermetically sealed cats, please!

Don't fear the adopters!

- Think infectious dose
- Who is really the biggest risk for transmission?



Test/Site:
Limit: 0
RLU: 66899

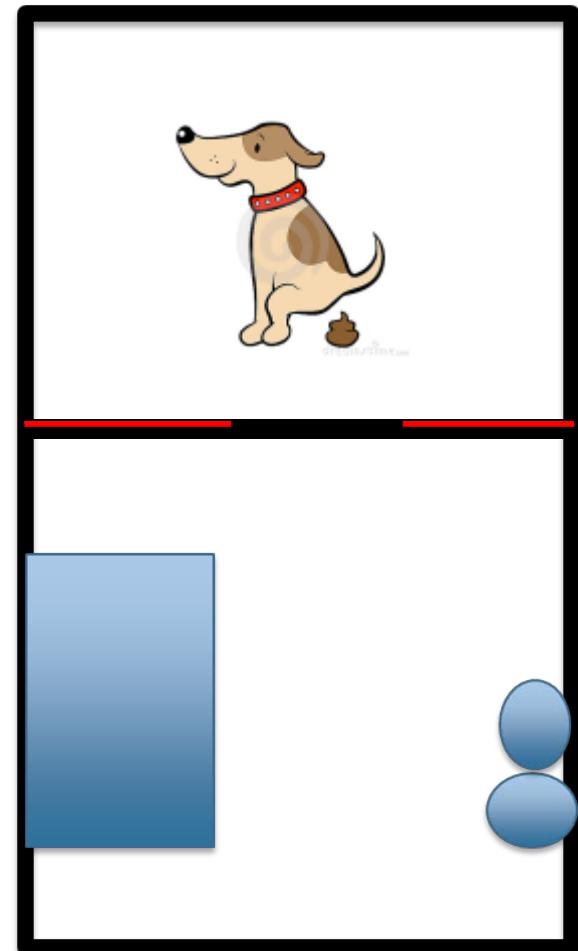
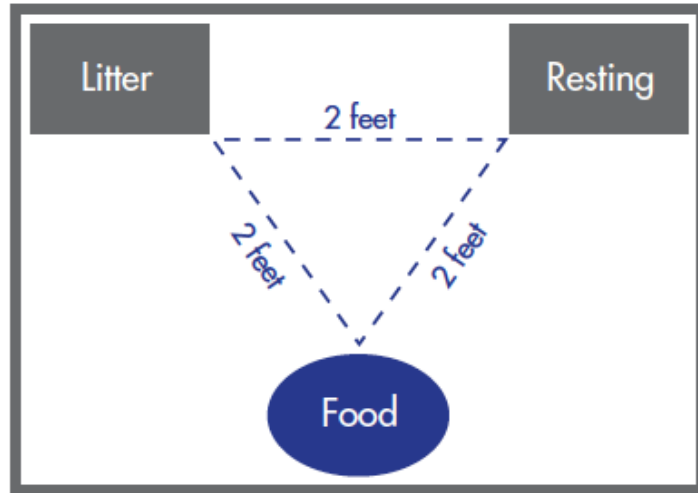


Test/Site:
Limit: 5000
RLU: 2362640
Result: Fail

Primary Enclosure: Layout



Elimination, Feeding and Resting Areas



Separation



- What we love
- Two room sized compartments
- Bedroom bathroom suite
- Wheels to move for cleaning or rearranging

Some Cat Housing Unit Options on the Market



Shor-line.com



Custom Housing Units



Runs for Cats



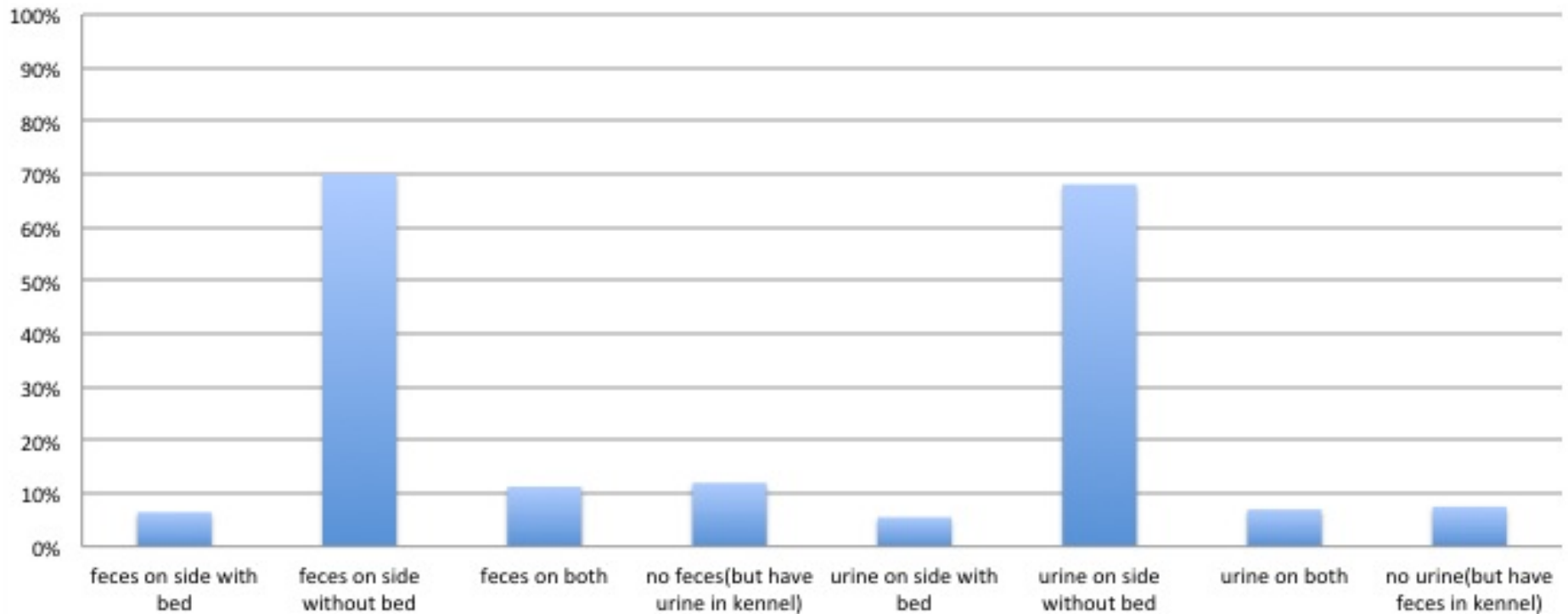
Masonco.com

Housing Affects Other Space and Care Needs



Surprised?

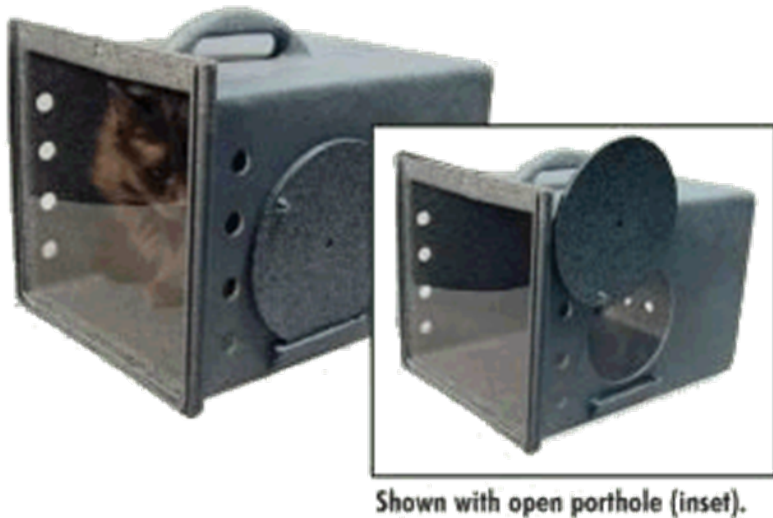
Kennel Elimination Preferences:
171 shelter dogs in double sided(bed on one side) indoor kennels in
shelters with daily walking programs
(961 observations of elimination in kennel (398 days recorded with no
elimination in kennel)



What's wrong with this picture?



Opportunities for Visual Concealment



“Hiding was negatively correlated with cortisol concentration and...may be an important behavior for coping with uncontrollable and unpredictable captive environments.”

Carlstead K, Brown JL, Strawn W. Behavioral and physiological correlates of stress in laboratory cats. *Appl. Anim. Behav. Sci.* 1993;38:143-158.

Hiding Places



Expanded Opportunities



Hiding Boxes



Visual Barriers



Poll Question – Answer in Chat

Do you provide hiding spots for cats?

- No
- Sometimes
- Most of the time
- Always

Poll Question – Answer in Chat

Do you provide hiding spots for dogs?

- No
- Sometimes
- Most of the time
- Always

Comfortable Resting Area



You can make these yourself! www.sheltermedicine.com

Group Housing

Freedom from Pain, Injury or Disease - by prevention or rapid diagnosis and treatment.

Freedom to Express Normal Behavior - by providing sufficient space, proper facilities **and company of the animal's own kind.**

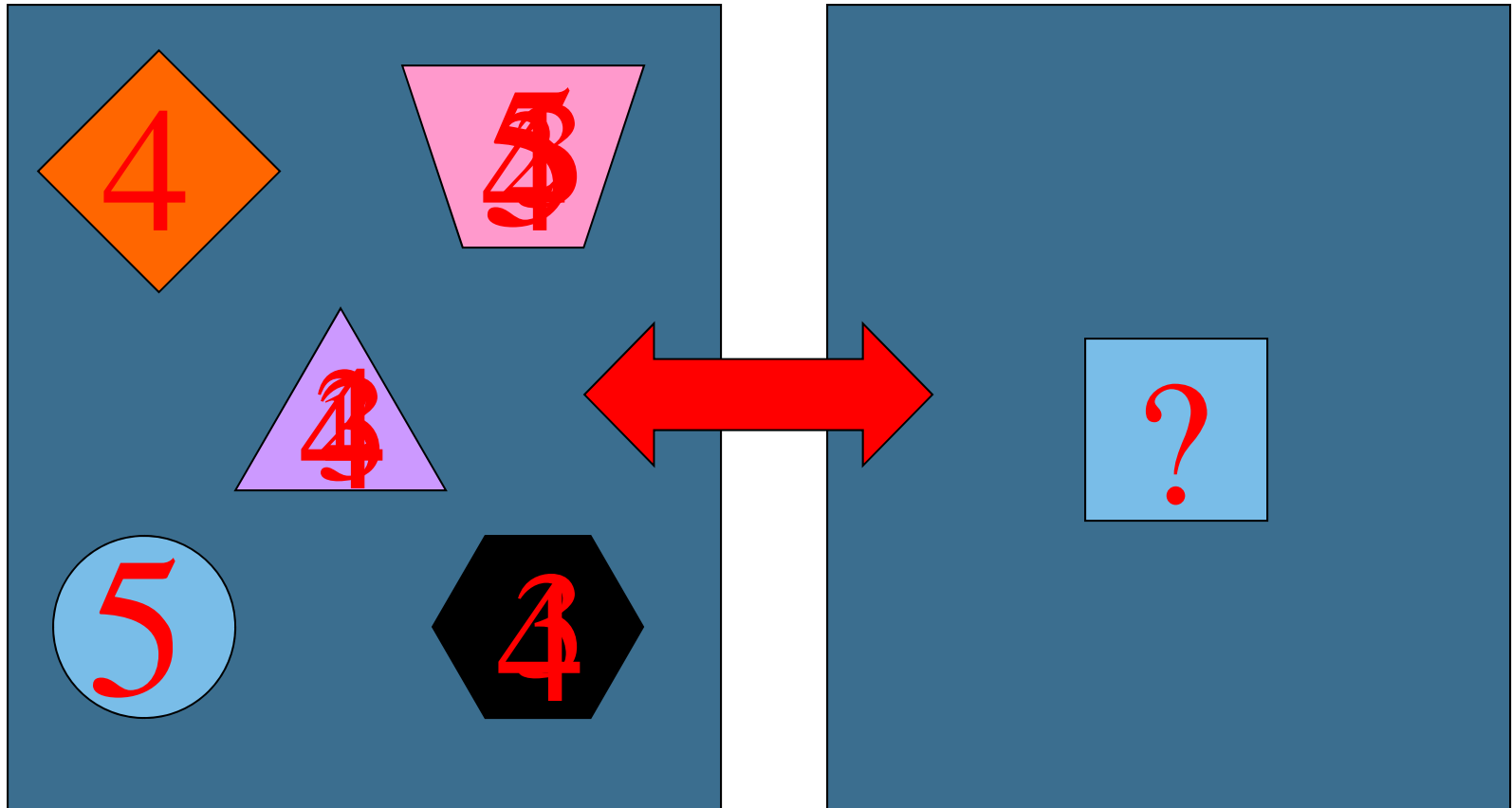
Friends with Benefits



Always balance risks of exposure with benefits of socialization

Monitoring considerations

Exposure Risk

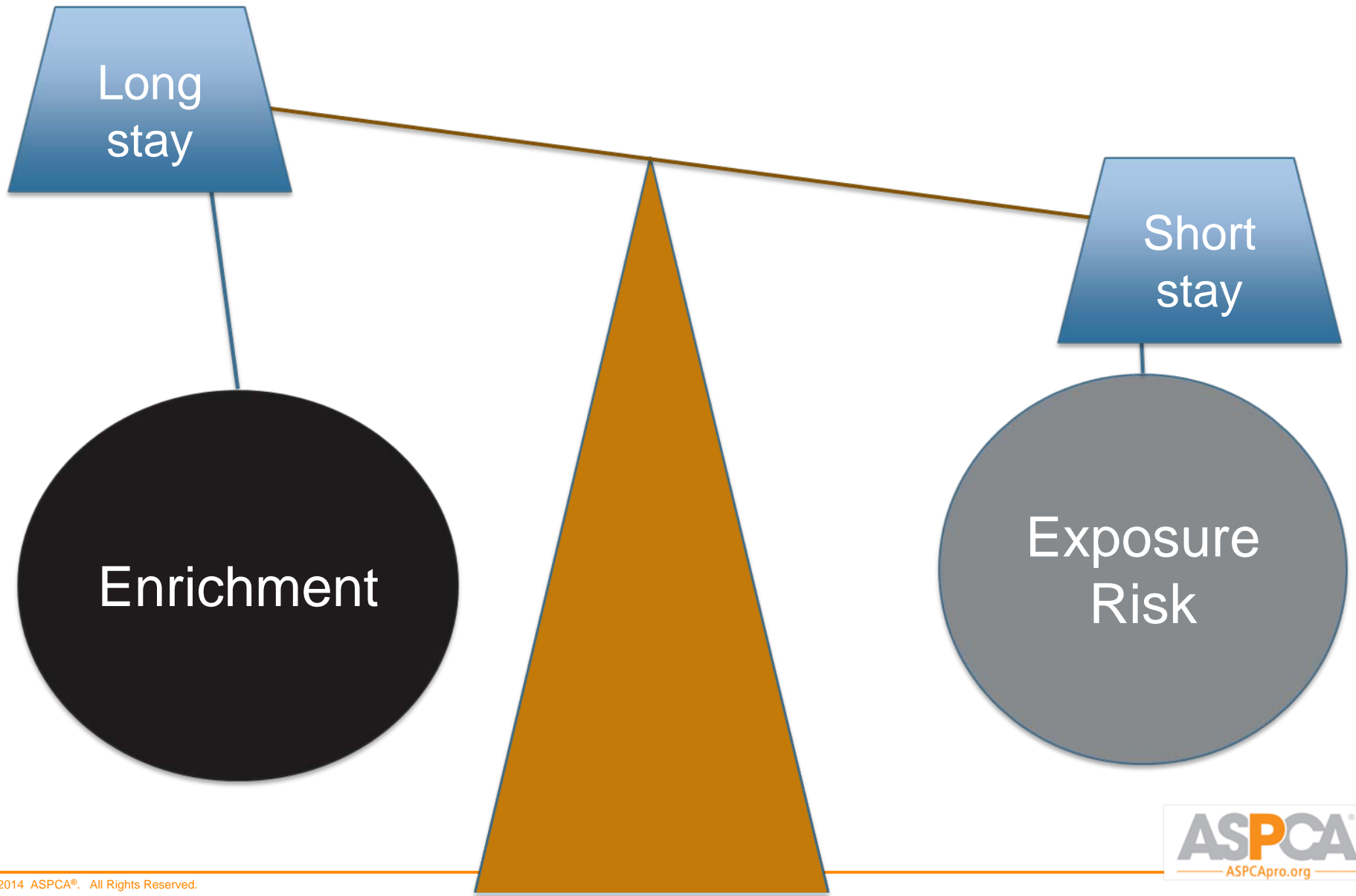




Play Areas



Balance the Risks



Separation / Isolation

- What kind of separation?
- Transmission type?
- Species differences
- How is transmission reduced?
- Separation alone is worth doing even if isolation cannot be achieved

Space Flexibility

Holding

Adoption

Temperature



- Monitor individually to ensure comfort
- Ensure they can adequately maintain their body temperature
- Special considerations for babies
- Necessary measures must be taken to ensure animal comfort and safety

Air Quality



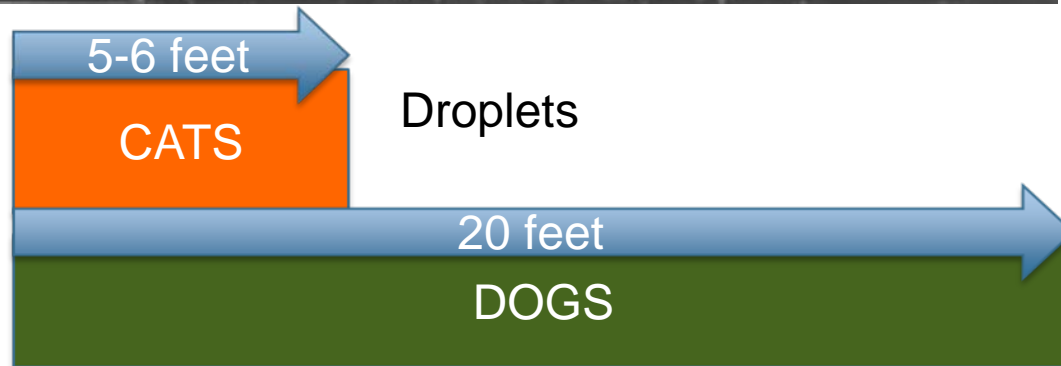
- Minimize irritants
 - Spot clean, no spraying
 - Reduce dust and debris in the air
- Use fans after cleaning
- Open doors and windows
- Utilize outdoor space whenever possible
- Ventilate!
- Don't hang your hopes on air filters

Ventilation



*Lago, A., McGuirk, S.M., Bennett, T.B., Cook, N.B., and K.V. Nordlund. 2006. Calf respiratory disease and pen microenvironments in naturally ventilated calf barns in winter. J Dairy Sci 89: 4014-4025.

Ventilation for Sick Animal Areas

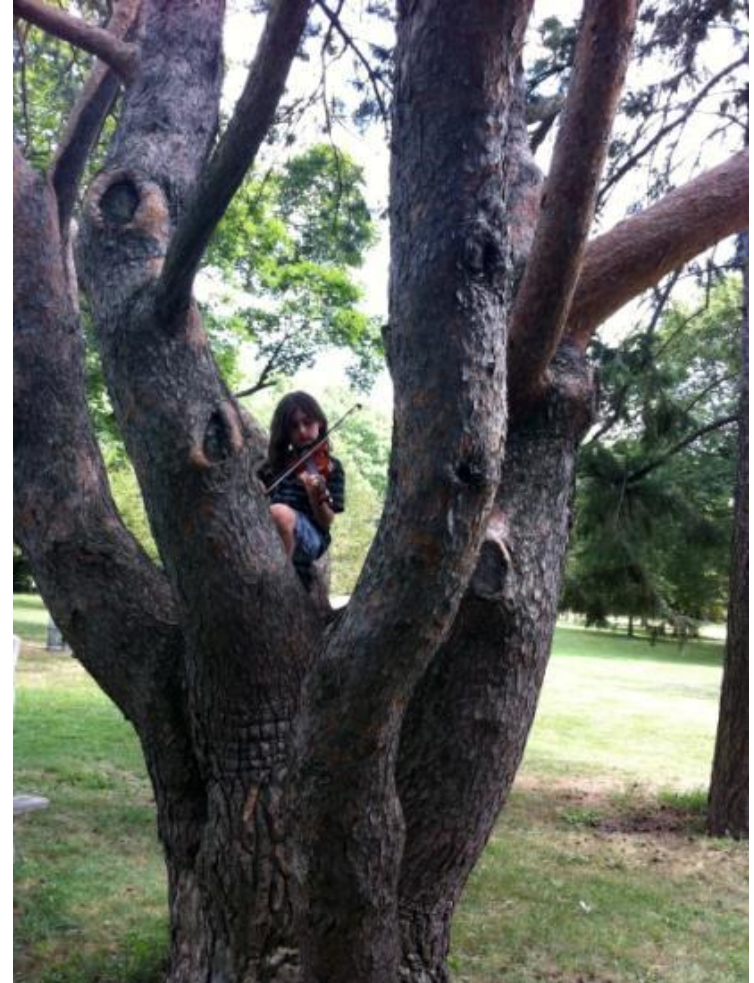


Fresh Air



Indoor / outdoor housing units

Elevation – Remember This?



Elevation



Elevation



Light and Light Cycles

Helps with monitoring

Normal cycles of light and dark

Daylight / Sunlight

Appearances?

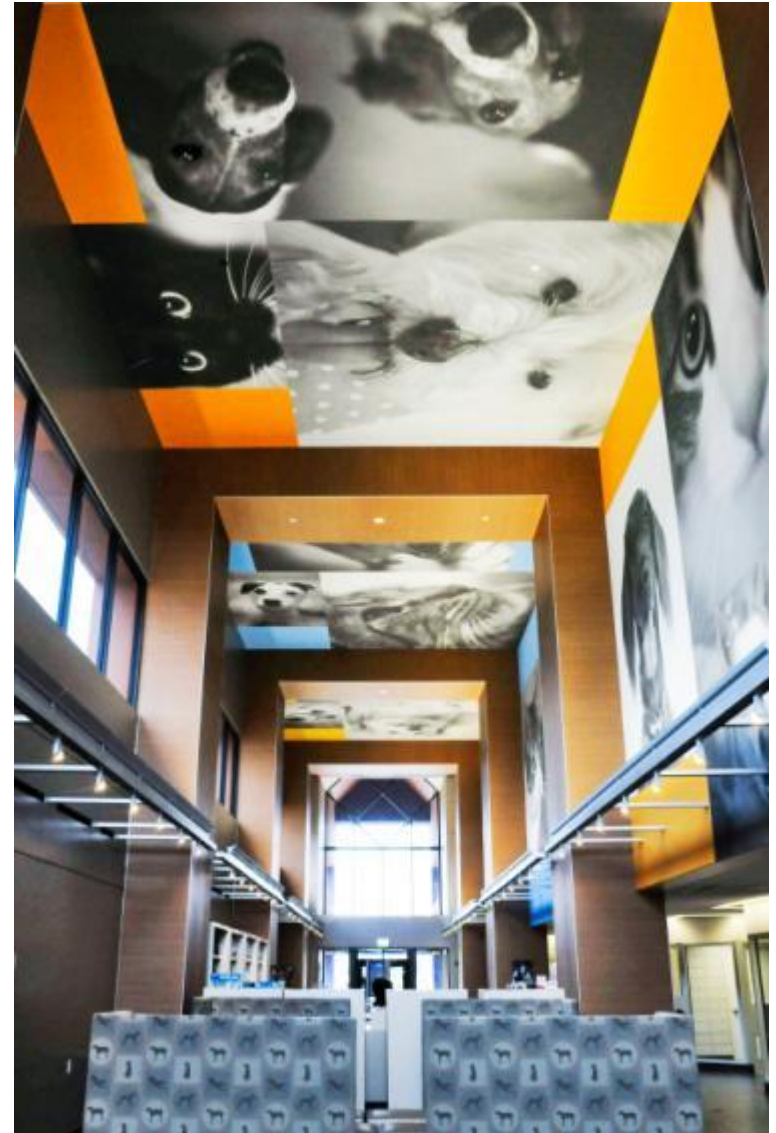


Matters to adopters and funders

So...

Matters to animals

Double points if beautiful appearances
can also be functional



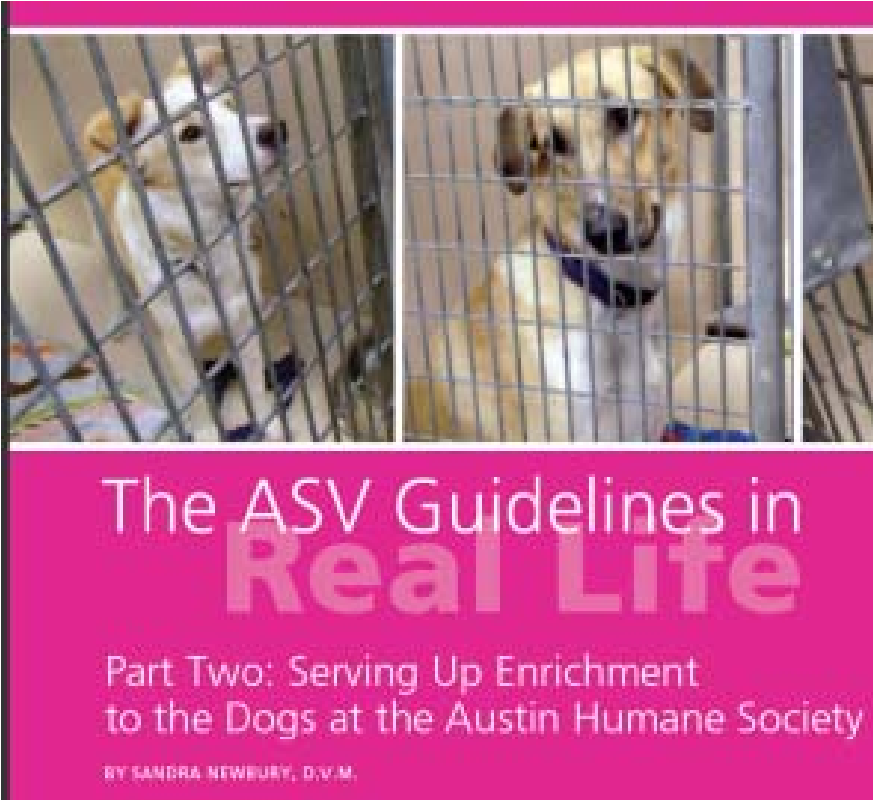
Limits on Stressors

Dogs – Barking and Otherwise

Avoid exposure to dogs

- *“cats with high dog exposure had significantly higher urine cortisol...than cats with low dog exposure.”*
- McCobb EC, Patronek GJ, Marder A, et al. Assessment of stress levels among cats in four animal shelters. *JAVMA* 2005;226:548-555.

Barking Isn't Even Good for the Dogs



Clicking for Quiet

<http://www.clickertraining.com/node/4114>

Reduce Noise

- Banging
- Water spraying
- Music
- Equipment

Cage Moves

- “[herpes] virus re-excretion [was stimulated] in over 50% of...cats by the ‘stress’ situation of a change in housing.”
- Gaskell RM, Povey RC. Experimental induction of feline viral rhinotracheitis virus re- excretion in FVR-recovered cats. *Vet Rec.* 1977;100(7):128-133

Irregular Caregiving

- Creates stress
- Missed expectations
- May cause increased exposure

General Considerations

- Double compartments
[see 10/21/14 ASPCA Double Compartments webinar]
- Open air / interactive fronts
- Adequate size to stretch
- Partial width only for guillotines
- Partial (not complete) visual barriers
- Adequately sized litter box cubbies
- Cat cages elevated off the floor

What can you do tomorrow?

- Provide concealment
- Provide enrichment
- Provide bedding
- Train the dogs to keep quiet
- Switch over to spot cleaning
- Improve efficiency and drop LOS to decrease stay and increase “space”
- Make a plan for housing improvements!

Thanks for all you do!

