



Kennel Design with Behavior & Welfare Considerations

Croney Research Group

What is Kennel Design with Behavior and Welfare Considerations?

- Design based on how dogs experience the space
- Supports physical and psychological needs of dogs
- Improves dog welfare

Kennel Design with Behavior and Welfare Considerations Benefits Dogs!

- Improves physical and behavioral health
- Minimizes stress



Kennel Design with Behavior & Welfare Considerations Benefits Caretakers!

- Decreases health concerns in dogs
- Decreases undesirable behaviors in dogs
- Eases monitoring and cleaning
- Improves access for interaction and offering of enrichment items
- Improves safety

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For safety, all kennels must meet state and federal requirements and be free from:

- Extreme noises
- Slippery surfaces
- Risks for injury
- Toxins
- Transmissible diseases



Considerations when Designing Kennels

1. Breeds, breed-specific behaviors, individual dog preferences, dog sizes
2. Type of kennel — indoor, outdoor, indoor/outdoor
3. Special needs and uses (e.g., exam rooms, quarantine areas, whelping areas)
4. Physical safety, design and materials in compliance with state and federal requirements

Improve environmental complexity and enrichment in home pens by including:

- Platforms, steps, ramps
- Easy delivery of enrichment items
- Multiple surfaces (e.g., grass, gravel, mats, cement, tile)
- Beds
- Solid barriers and areas of visual access





NOTE Social isolation and spatial restriction can both be harmful



Benefits of Larger Kennel Space

- Accommodate social housing with room for personal space
- Allow for physical exercise
- Enable a full range of body movements
- Offer a choice of location for dogs (e.g., out of view, up higher)

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How can Group or Pair Housing Improve Welfare?

- Increased sleeping
- Increased exploration
- Increased social interaction and play
- Improved dog-human relationship
- Fewer bizarre movements, stereotypies, undesirable behaviors, vocalizations

Benefits of Indoor and Outdoor Access

- Support for dogs' strong preference to eliminate, sleep, eat, and drink in separate areas
- Increased activity level
- Improved caretaker access to provide care safely, humanely, and efficiently
- Reduced risks for disease transmission

A photograph of a blue canopy tent set up over a fenced-in play area. The play area contains a wooden play structure with a slide and a tunnel. A dog is visible in the foreground. The background shows trees and a grassy area.

Perfecting Play Yards

- Provide large outdoor or indoor play yards
- Supply access to shade and cover to protect from the weather and give indoor/outdoor choice
- Offer a variety of safe substrates (e.g., sand, dirt, grass, gravel, concrete)
- Include slides, tunnels, climbing structures, ramps, stairs
- Promote the expression of rewarding natural behaviors by providing sandboxes for digging, shallow pools for splashing and temperature regulation, and opportunities to explore by sniffing

Noise Concerns

- Noise can cause physical and psychological stress for dogs (and people)
- Quiet environments can improve the quality of life of kenneled dogs

Loud kennel noises can be caused by:

- Cleaning equipment
- Caretakers
- Dogs barking

Minimizing Noise Potential

- Avoid building kennels where runs face one another
- Cover the bottom portion of kennel doors while moving dogs
- Separate high-traffic areas from quiet areas
- Place outdoor play yards out of view of home pens
- Select soft-close hardware on dog doors
- Incorporate noise mitigation and sound absorbing materials
- Reduce barking by providing enrichment and socialization

Flooring Matters!

- Appropriate management of flooring is critical for dog welfare
- Providing multiple flooring types (e.g., for standing, playing, eliminating/house training, and resting) benefits behavioral and physical health
- Multiple flooring types have been associated with cleanliness and foot and joint health



How Does Flooring Impact Welfare?

- Age, body condition score, and type of flooring are significant factors in the occurrence of interdigital cysts (furuncles)
- Substrate in whelping boxes can impact puppy growth
- Puppies develop preferences for substrates for elimination



Managing Flooring

- Provide multiple types of flooring
- Follow hygiene and cleaning guidance of all surfaces
- Ensure that flooring is clean, dry, and not saturated with feces or urine
- Install grip as needed in regularly wet areas to minimize slipping

Designing Floorplans with Welfare in Mind

1. Create a floorplan with large kennels to accommodate group housing
2. Include outdoor access for home pens
3. Designate spaces for intended use (e.g., veterinary, exercise, whelping)
4. Place quiet environments in the back with high traffic areas in front
5. Utilize gates and alleyways to promote efficiency and ease for handlers
6. Ensure that all spaces can be easily monitored and maintained
7. Consider the locations of drains for safety and hygiene
8. Install systems in the front of pens that support easy caretaker contact

What **Not** to Do:

- Offer only single-dog home pens
- Create main thoroughfares in front of the kennels
- Place high-visit areas in the back and low-visit areas in the front
- Provide one type of flooring that is not properly managed
- Block caretakers' view and access to kennels
- Fail to include built-in furnishings
- Place whelping pens and outdoor exercise yards in proximity to home pens



FAQ

The kennel facility is already an existing structure and floorplan. Are there still ways that dog behavior and welfare accommodations can be made?

Yes!!

Even in existing facilities it is possible to make changes that can have great benefits for the welfare of kennel-housed dogs

Examples of Retrofitting

- Combine single runs to allow enough space for group housing
- Expand runs to have outdoor components
- Deliberately designate spaces with use and traffic in mind
- Add specific fixtures and finishes (e.g., soft-close hardware, visual barriers, sound-absorbing materials)
- Integrate built-in furnishings (e.g., add a dog crate for resting and perching)
- Supply a variety of flooring materials (e.g., add a sturdy rubber mat to easily create additional solid surface)

Learn More:

- [Quick Tips for Success: Kennel Design with Behavior & Welfare Considerations](#)
- [Setting Puppies and Dogs Up for Success: Designing Kennels with Behavior and Welfare Considerations in Mind](#)
- [Temperature Requirements for Dogs](#)
- [Auditory Stress: Implications for Kenneled Dog Welfare](#)
- [Promoting the Welfare of Kenneled Dogs: Environmental Considerations](#)
- [Effects of Flooring on Animal Health and Well-Being: Implications for Kenneled Dogs](#)
- [Promoting the Welfare of Kenneled Dogs: Space Allocations and Exercise](#)



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