HARMONY IN HIGHRISES

FOR HUMANS AND THEIR LOYAL COMPANIONS

A CANINE INCLUSIVE DESIGN GUIDELINE FOR BEST PRACTICES

by

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

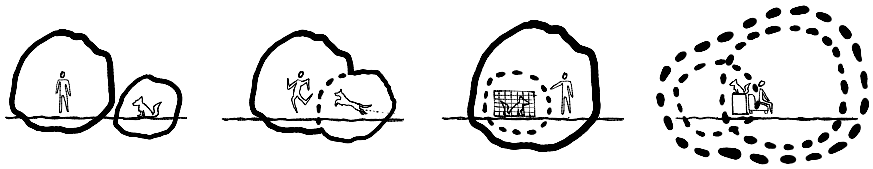
Abstract

The idea of a house has always been present since the beginning and as humanity underwent evolutionary transitions over the course of history, so did the understanding of what a house is. Architecturally, while houses have modernized with regard to construction methods, materiality, and technology, the essence of a home seems to have remained the same. At first glance, many who read the previous statement do not see anything wrong with it, but take a second and dig a little deeper and you will begin to realize the underlying issues within. If modern homes can be defined as permanent or semi-permanent spaces used as residences for one or more human occupants, which is clearly driven by the necessities of people, then what happens when society evolves? If the people change, shouldn't the essence of a home change with it and be reflected in the architecture?

In the last few decades, there has been a noticeable surge in the canine population in North America, a trend that further accelerated in the wake of the 2021 pandemic (Institute 2022). While the concept of dog-inclusive architecture is still in its infancy, a comprehensive synthesis can be attained by exploring the realms of both canine behavioral psychology and selective architectural philosophies. Notable figures like Aldo Van Eyck and Jane Jacobs have contributed their spatial design philosophies in public realms (Jacobs 2011), serving as foundational references. Though they didn't specifically address dogs, Eyck, for instance, explored the concept of affordances – the possibility of action - through his playground designs (Strauven 2007). Additionally, and arguably more importantly, the work of Jakob von Uexküll, a Baltic German biologist, delves into animal behavior studies and introduces the concept of Umwelt, acknowledging the unique subjective worlds of animals and humans (Uexküll 2010). Uexküll argued that different species perceive and engage with their environments differently, emphasizing the importance of comprehending these distinct perspectives to truly understand animal experiences (Uexküll 2010). Therefore, to successfully create an architecture for both humans and dogs, we must first recognize the shift society underwent to coexist with dogs and then understand their Umwelt.

FIG 0.1 *[RIGHT]*

A sketch depicting the evolution of human-animal relationships of dogs from wild animals to coexistence as domesticated pets. This evolution alongside humans as our canine companions warrant acknowledgement of their Umwelt so that our architecture no longer neglects them as part of our society.



Wild *Intruder* *Pet* *Coexistence*

This thesis aims to tackle the social neglect towards our dogs as their presence has grown in our society and challenges what the new fundamental ingredients are that structure the essence of what a modern home should be. Specifically, this research will investigate how to create a canine-inclusive design guide for high-density North American urban landscapes, by reimagining high-rise residential architecture in order to improve the everyday quality of life for our canine companions. Concepts such as inclusivity, sustainability, and building science will be considered to help guide the research, which eventually will culminate in a final design proposal in Toronto's Liberty Village as a successful canine inclusive example. It is our responsibility as Architects to understand the fundamental distinction between a house and a home, recognizing that both are integral to the creation of successful designs. While this thesis attempts to offer a fresh perspective on architecture, it also seeks to emphasize the profound significance of the bond between humanity and our loyal canine companions - between "man-kind" and "man's best friend".

Acknowledgements

This research journey began quite differently when I first entered this graduate program in 2022. I explored numerous ideas before finding the courage to pursue both my passions for dogs and architecture, thanks to the academic support, mentorship, and guidance from my colleagues and faculty. Thank you to Philip Beesley for encouraging me back in TRD1 to take a leap of faith in this canine-centric idea. Your enthusiasm in my research helped me find the confidence to shape this thesis' foundation. A heartfelt thank you to my supervisor, Terri Boake, for your unwavering support, guidance, and challenges in my work. Our shared love for dogs and your critical insights, practicality, and experiences have elevated my research to levels I never imagined. Your honesty and accountability were crucial in helping me meet my tight deadlines and your class presentation in TRD1 ARCH 610 not only opened my mind but also gave me the courage to pursue my passion and figure out how to make it happen. After that talk, I knew I wanted you as my supervisor. To my committee member, David Fortin, thank you for your shared passions in my work which resulted in fun and insightful conversations about dogs. Your knowledge and experiences with two large dogs, each over 100 pounds, added depth to my research, making it richer and more comprehensive.

To my family and friends (and team leader) who have indulged my animal fascinations over the past year, I feel incredibly fortunate to have you. Your witty remarks about my canine-centric ideas sparked many insightful and often hilarious conversations that have significantly shaped this research. And lastly, to my other half, Venus Chung, none of this would be possible without you. Your support in my career, health and mental wellbeing gave me the strength I needed to make it to the finish line.

Dedication



This thesis is dedicated to my dog, Truffles.

Over the past three years, raising her has profoundly changed my life and the way I view animals. I believe our canine companions deserve the best life possible, and it is our responsibility to provide it, whether as simple doggy parents or as humble architects.

@truffthecorg



Table of Contents

	iii	Author's Dedication
	iv	Abstract
	vi	Acknowledgements
	vii	Dedication
	x	List of Figures
chapter 1.0	*1*	**RECOGNIZING REALITY**
	3	Background Context & Rationale
	7	Statement of Problem
	9	Current Responses
	11	Research Question & Objective
chapter 2.0	*13*	**UNDERSTANDING THE CANINE UMWELT**
	15	Canine Behaviour Psychology and Physiological Limitations
	19	Ethological Analysis
	31	Survey & Interviews
chapter 3.0	*33*	**CANINE INCLUSIVE DESIGN GUIDELINE**
	35	Canine Centric Design Principles
	39	The Building Scale Best Practices
	93	The Unit Scale Best Practices
	125	Overall Best Practices
chapter 4.0	*151*	**HARMONIOUS INTERVENTION**
	153	"A Day in the Life"
chapter 5.0	*201*	**NEXT STEPS**
	203	Conclusion
	208	Bibliography
	220	Appendix

List of Figures

Prelude

Fig. 0.1 - [v] *A sketch depicting the evolution of human-animal relationships of dogs from wild animals to coexistence as domesticated pets. This evolution alongside humans as our canine companions warrant acknowledgement of their Umwelt so that our architecture no longer neglects them as part of our society.*
Created by Author.

Chapter 1.0 | Recognizing Reality

Fig. 1.1 - [3] *Canadian statistics graphically represented to show the ratio of dogs to people, a 2023 population comparison between human to dog and a comparison between the required vs dog area in the city*
Created by Author in reference to the information provided by Statistics Canada website.

Fig. 1.2 - [4] *A site map of Toronto outlining all 75 existing off-leash areas (OLAs) for dogs. The call out area shows a zoomed in site plan view of Liberty Village.*
Created by Author.

Fig. 1.3 - [5] *This chart breaks down all 75 OLAs in the city of Toronto into each of their quadrants and their respective surface area sizes. 28 OLAs are 2000 sqm and under, 28 OLAs are between 2000 sqm and 4999 sqm, 5 OLAs are between 5000 sqm and 9999 sqm, and 12 OLAs are 10000 sqm and up.*
Created by Author.

Fig. 1.4 - [6] *An axonometric of Liberty Village, bounded by Dufferine Street to the west, King Street West to the north, Strachan Avenue to the east and the Gardiner Expressway to the south.*
Created by Author.

Fig. 1.5 - [8] *A photograph showing Truffles playing a little too close to Croquette in the winter of 2021. Due to the lack of adequate space for dogs, this image demonstrates one dog entering the personal space of another. Disclaimer - all dogs showed left unharmed following the capturing of this photo.*
Taken by @helloinspira.

Fig. 1.6 - [9] *Instagrams posts examples of different businesses marketing their involvement with the canine community.*
Screen captured by Author.

Fig. 1.7 - [10] *An article showing home owner, Jognathan Lower, taking initiative to DIY a personal space for his dog, Teddy. A few design tips he learned:*

- Utilize spaces you normally wouldn't use (i.e. below stairs)
- raised bed for storage underneath for Teddy's toys
- sound proofing walls to create safe space away from fireworks
- TV installed for white noise to calm Teddy down when alone.
Hofmann, Michelle. 2021. 'These Homeowners Are Creating Unique Spaces For Their Pets'. Forbes. 2021. https://www.forbes.com/sites/michellehofmann/2021/12/06/not-your-average-dog-house/.

Fig. 1.8 - [10] *Coorperate offices such as S^A have begun to recorgnize dogs as part of their team.*
'Practice'. n.d. Schwartz and Architecture. Accessed 19 June 2024. https://saasf.com/practice/.

Chapter 2.0 | Understanding the Canine Umwelt

Fig. 2.1 - [16] *A non-hierarchical diagram of the various things a dog can perceive from their olfactory senses.*
Created by Author.

Fig. 2.2 - [17] *A non-hierarchical diagram of the various things a dog can perceive from their sense of sight.*
Created by Author.

Fig. 2.3 - [20] *These are 6 ethogram forms to analyze your canine companion. Full sized blank templates can be found in the Appendix of this thesis to photocopy if you wish to "become an ethologist" and study your pet.*

Defintition: Ethologist // Someone who studies the behaviour of animals, usually in their natural habitat.

Definition: Ethogram // A kind of menu of what animals do and can be focused on different environments and different times of day.
Created by Author.

Fig. 2.4 - [31] *A summary of all participant responses in the Toronto Condominium Public Consultation Survey, outlining which issues were most common amongst the people.*
Created by Author.

Chapter 3.0 | Canine Inclusive Design Guideline

Fig. 3.1 - [35] *The chart displays a list of requirements for a dog to coexist in society based off my personal experience with Truffles and the support of PHD Dr. Debra Primovic's article on PetPlace.*
Created by Author.

Fig. 3.2 - [36] *The chart displays a summary of what an ideal typical daily schedule is for your dog, inspired by my personal experience with Truffles and PHD Dr. Debra Primovic's article on PetPlace. The locations on the right indicate where the dog will interact at that specific period of the day, which will help inform design decisions.*
Created by Author.

Section A: At Grade Best Practices

Fig. 3.3 - [40] *Typical ground floor plan layout with the Canine Centric design principles.*
Created by Author.

Fig. 3.4 - [41] *Typical ground floor plan layout with the Canine Path of Travel through the canine designated entrance.*
Created by Author.

Fig. 3.5 - [42] *3 different examples of acceptable door styles with vision panels to accommodate continuous canine sightlines.*
Created by Author.

Fig. 3.6 - [43] *Dog looking through door from the inside. The door features a full-height glass panel with a frosted finish. While the glass doesn't provide a completely clear visual connection, it still includes a safety feature: allowing visibility of people or dogs on the other side before opening, thereby preventing unexpected collisions.*
Dip.CBST, Adrienne Farricelli CPDT-KA. 2024. How to Stop Your Dog From Bolting Out the Door. https://pethelpful.com/dogs/Dog-Training-How-to-Prevent-Your-Dog-from-Bolting-Out-the-Door.

Fig. 3.7 - [43] *Photograph of Truffles looking through a window in a door, longing to go outside, as I slowly get my shoes and coat on. This door exemplifies a design with smaller glass panels dispersed throughout, offering visual connections at varying heights suitable for dogs of different sizes.*
Captured by Author.

Fig. 3.8 - [44] *Photograph of 77 Greenwich in Manhattan with a side entrance for opportunities to dedicate to pets. A simple design consideration to have a designated entry point for canines to contain messes, while not segregating dogs and dog owners to the back of the buliding as an after thought.*
Flamer, Keith. n.d. First Peek At Downtown Manhattan's 77 Greenwich Condominium. Accessed 13 June 2024. https://www.forbes.com/sites/keithflamer/2019/05/16/first-peek-at-downtown-manhattans-77-greenwich-condominium/.

Fig. 3.9 - [44] *Side entrance at Franklin Tower in Philadelphia that open opportunities for canine designated amenities. Additionally, there is a slight building setback designed to create a gentler transition from the entry door to the sidewalk. This, along with strategic landscaping, provides ample space for canine facilities such as pet relief areas.*
Explore Franklin Tower - One Bedroom - Style 3 in 3D. n.d. Accessed 13 June 2024. https://my.matterport.com/show/?m=dpusXjTg8F7.

Fig. 3.10 - [45] *Example plan callout of a typical elevator and waiting area.*
Created by Author.

Fig. 3.11 - [47] *Example of durable tile flooring for waiting area outside of elevator.*
Do Dogs Understand Elevators? n.d. Accessed 13 June 2024. https://www.thewildest.com/dog-behavior/do-dogs-understand-elevators.

Fig. 3.12 - [47] *Example of dog in elevator with adequate space for more human and canine occupancy.*
Malaker, Ed. 2021. Do Dogs Understand Elevators? Interesting Explanation. https://www.dogster.com/dog-training/do-dogs-understand-elevators

Fig. 3.13 - [47] *Example of a sticker sign option to clearly communicate a dog friendly elevator.*
Luzon. 2017. Samgupsalamat Restaurant @4th Floor - Picture of Century City Mall, Luzon - Tripadvisor. https://www.tripadvisor.ca/LocationPhotoDirectLink-g298450-d6674001-i294118201-Century_City_Mall-Makati_Metro_Manila_Luzon.html.

Fig. 3.14 - [48] *Example of a wall mounted sign option to clearly communicate a dog friendly elevator.*
The Bloc [@TheBlocLA]. 2015. Dog Friendly Elevator. https://twitter.com/TheBlocLA/status/630391624682450944

Fig. 3.15 - [48] *Example of a large sticker sign on elevator door option to clearly communicate a dog friendly elevator.*
Yeo, Jan-Su. 2011. Dogs on the Roof. https://happybarkdays.wordpress.com/2011/02/08/dogs-on-the-roof/

Fig. 3.16 - [48] *Carpet rolled out in elevator to combat winter conditions and mitigate maintenance requirements.*
Viper 8925 Elevator Mats with Heavy Duty Edging. n.d. Accessed 13 June 2024. https://canadamats.ca/products/viper-8925-elevator-mats-with-heavy-duty-edging.

Fig. 3.17 - [49] *Typical staircase axonometric with canine accessible accommodations.*
Created by Author.

Fig. 3.18 - [50] *Typical staircase plan and elevation to show canine accessibility in vertical circulation.*
Created by Author.

Fig. 3.19 - [51] *Typical section detail cut through canine accessible steps.*
Created by Author.

Fig. 3.20 - [52] *Joe Chikamori's staircase for dogs as a part of his simple house design project in Vietnam.*
Chikamori, Joe. n.d. 'Joe Chikamori · House Renovation In Ho Chi Minh City'. Divisare. Accessed 9 April 2024. https://divisare.com/projects/302049-joe-chikamori-house-renovation-in-ho-chi-minh-city.

Fig. 3.21 - [52] *In order to accommodate for dogs, Joe had to explore smaller steps with lower risers. Similar principles were extracted from Joe's designs and implemented in this design guide.*
Chikamori, Joe. n.d. 'Joe Chikamori · House Renovation In Ho Chi Minh City'. Divisare. Accessed 9 April 2024. https://divisare.com/projects/302049-joe-chikamori-house-renovation-in-ho-chi-minh-city.

Fig. 3.22 - [53] *Typical hallway axonometric of hallway with multi-level enrichment paths for dogs that can double as public seating.*
Created by Author.

Fig. 3.23 - [54] *Floor plan callout of a typical hallway with canine path of travel through and adequate canine clearances.*
Created by Author.

Fig. 3.24 - [55] *Axonometric view of a typical cleaning spa facility.*
Created by Author.

Fig. 3.25 - [57] *Partial floor plan callout of a typical cleaning spa facility.*
Created by Author.

Fig. 3.26 - [57] *Elevation of a typical cleaning spa facility.*
Created by Author.

Fig. 3.27 - [58] *Example of how a Pet Cleaning facility can look like with standard stations to order as furniture equipment. Devising wall partitions are utilized to separate the drying area from the washing areas.*
Quarterra Pet Perks. n.d. Accessed 30 April 2024. https://quarterra.com/pet-perks.

Fig. 3.28 - [58] *Example of how a Pet Cleaning facility can look like with standard stations to order as furniture equipment. Since drying area is not adjacent to washing areas, no devising partition is needed.*
Large Studio Unit All For You! Get 2mo Free and More! Call Now! - Apts/Housing for Rent - Apartment Rent. 2024. https://sfbay.craigslist.org/pen/apa/d/millbrae-large-studio-unit-all-for-you/7751582563.html.

Fig. 3.29 - [58] *Example of permanent pet washing stations at Paw and Paw.*
Where to Find Self Serve Dog Washes Around Salt Lake City - Dog Friendly SLC. n.d. Accessed 13 June 2024. https://dogfriendlyslc.com/saltlakediydogwash/.

Fig. 3.30 - [59] *Axonometric view of typical exterior pet relief area at grade.*
Created by Author.

Fig. 3.31 - [60] *Partial floor plan callout of typical exterior pet relief area at grade.*
Created by Author.

Fig. 3.32 - [61] *Section detail of typical pet relief floor assembly with synthetic turf over aggregate.*
Created by Author but inspired by K9 Grass by ForeverLawn.

'How Is Synthetic Grass for Dogs Installed? | K9Grass®'. n.d. K9Grass by ForeverLawn (blog). Accessed 30 April 2024. https://k9grass.com/faq/how-is-synthetic-grass-for-dogs-installed/.

Fig. 3.33 - [61] *Section detail of typical pet relief floor assembly with synthetic turf over pedestals.*
Created by Author but inspired by K9 Grass by ForeverLawn.

'How Is Synthetic Grass for Dogs Installed? | K9Grass®'. n.d. K9Grass by ForeverLawn (blog). Accessed 30 April 2024. https://k9grass.com/faq/how-is-synthetic-grass-for-dogs-installed/.

Fig. 3.34 - [62] *Example of outdoor pet relief area at Nashville International Airport (BNA)*
Gerlock, Kym. 2022. Travelling with Man's Best Friend at BNA. https://www.internationalairportreview.com/article/175743/travelling-with-mans-best-friend-at-bna/.

Fig. 3.35 - [62] *Example of artificial fire hydrant in pet relief area.*
Tampa International Airport (TPA) Pet Relief Areas. 2024. https://petfriendlytravel.com/pft_airports/tampa-international-airport-tpa-pet-relief-areas/.

Fig. 3.36 - [62] *Example of canine disposal station with poop bag dispenser and etiquette sign.*
Piedmont Triad International Airport (GSO) Pet Relief Areas. 2024. https://petfriendlytravel.com/pft_airports/piedmont-triad-international-airport-gso-pet-relief-areas/.

Fig. 3.37 - [62] *Example of short hedges as soft perimeter landscaping for pet relief area.*
Haythorne, Kristin. 2022. Benefits of Small Hedges. https://tesselaar.com/benefits-of-small-hedges/.

Fig. 3.38 - [63] *Partial floor plan callout of typical ground layout, showing commercial retail spaces along the street front.*
Created by Author.

Fig. 3.39 - [64] *Dogtopia building exterior view example.*
Dogtopia Exterior. n.d. Accessed 30 April 2024. https://www.dogtopia.com/franchising-us/business-opportunity/overlandpark_1_-2/.

Fig. 3.40 - [64] *Example of Dogtopia Reception Desk.*
Why Dogtopia? 2024. https://www.dogtopia.com/franchising-ca/why-dogtopia/.

Fig. 3.41 - [64] *Example of Dogtopia dogs playing in room with daycare employees.*
kaylak. 2022. How Many Steps Does Your Dog Take Every Day? https://www.dogtopia.com/blog/how-many-steps-does-your-dog-take-every-day/.

Fig. 3.42 - [65] *Petsmart building exterior view example.*
Kerwin, Nicole. 2023. PetSmart Attracts New Investor | Pet Food Processing. https://www.petfoodprocessing.net/articles/17234-petsmart-attracts-new-investor.

Fig. 3.43 - [65] *Ren's Pets building exterior view example.*
Ren's Pets. 2023. https://www.renspets.com/blog_entries/ren-s-pets-announces-two-new-stores-in-markham-and-oshawa-this-fall.

Fig. 3.44 - [65] *Global Pet Foods building exterior example.*
Whitecourt | Whitecourt. n.d. Accessed 13 June 2024. https://whitecourt.globalpetfoods.com/whitecourt/.

Fig. 3.45 - [66] *Example of dog at vet.*
Best Veterinary Hospital in Orlando, FL | Avalon Family Vet. 2022. https://avalonfamilyvet.com/.

Fig. 3.46 - [66] *Multiple dogs being walked by a local dog walking company in Liberty Village.*
TORONTO DOG WALKING AND BOARDING SERVICES. n.d. Accessed 30 April 2024. http://libertypooch.com/services.

Fig. 3.47 - [68] *Floor plan of typical ground layout, showing POP spaces around the property.*
Created by Author.

Fig. 3.48 - [69] *Axonometric view of a typical off leash area dog park.*
Created by Author.

Fig. 3.49 - [70] *An example render by Sterling Bay and SOM of a future dog park in Chicago's Lincoln Yards development. The area is populated with numerous trees to provide optimal shade, complemented by a variety of surface materials, including a sand pit, grassy areas, and a water feature.*
SOM. 2019. Not Everyone Loves Your New Dog Park. This Is Why. https://www.bloomberg.com/news/articles/2019-02-28/not-everyone-loves-your-new-dog-park-this-is-why.

Fig. 3.50 - [71] *Floor plan of a typical off leash area dog park.*
Created by Author.

Fig. 3.51 - [72] *An example of dogs playing in splash pad. This is a crucial feature to consider during hot summer seasons, which can be dangerous for dogs. Access to water for cooling down helps prevent the risk of heat stroke.*
Bolen, Skip. 2019. What to Know before You Take Your Dog to an Off-Leash Park. https://www.nbcnews.com/better/lifestyle/mistakes-people-make-dog-park-put-their-pet-risk-ncna996146.

Fig. 3.52 - [72] *An example of dogs playing in the park with canine playground equipment. These agility inspired obstacles help mentally and physically enrich dogs during play sessions.*
Dog Parks | Cosumnes CSD | Elk Grove & Galt, CA. n.d. Accessed 2 May 2024. https://www.cosumnescsd.gov/315/Dog-Parks.

Fig. 3.53 - [72] *This community tennis court has a storage shed beside it for controlled access to the public. A similar concept can be implemented for building users to access for play toys.*
Captured by Author.

Fig. 3.54 - [73] *Axonometric view of the entrance into the OLA dog park.*
Created by Author.

Fig. 3.55 - [73] *Floor plan of the entrance into the OLA dog park.*
Created by Author.

Fig. 3.56 - [75] *Example of an off leash area dog park steel frame welcome sign, outlining rules and etiquette before entering.*
Barkpark. n.d. Dog Park Welcome Sign | BarkPark. Accessed 2 May 2024. https://www.dogparkproduct.com/amenities/premium-welcome-sign.

Fig. 3.57 - [75] *Example of an off leash area dog park wood frame welcome sign, outlining rules and etiquette before entering.*
TRURO. n.d. Truro-Bible Hill Off Leash Dog Park - Town of Truro. Accessed 2 May 2024. https://www.truro.ca/truro-bible-hill-off-leash-dog-park.html.

Fig. 3.58 - [76] *Example of trees in landscaping utilized as visual and acoustic barrier.*
published, Katie Mortram. 2023. 7 Best Trees and Shrubs to Soundproof Your Yard. https://www.tomsguide.com/features/7-best-trees-and-shrubs-to-soundproof-your-yard.

Fig. 3.59 - [76] *Example of human and pet drinking fountain.*
Murdock Manufacturing Water Fountains Installed at Runyon Canyon Park - Murdock Manufacturing. n.d. Accessed 2 May 2024. https://www.murdockmfg.com/fountains-runyon-canyon-park.

Fig. 3.60 - [76] *Example of dog waste disposal units that are part of a new city-wide system to divert dog waste from local landfills and convert it into green energy.*
Sharpe, Krista. 2022. Turning Poop into Power: Waterloo Planning to Install More Dog Waste Disposal Units. https://kitchener.ctvnews.ca/turning-poop-into-power-waterloo-planning-to-install-more-dog-waste-disposal-units-1.5874113.

Fig. 3.61 - [76] *Example of standard round garbage bins for general waste, recycling and compost. Recommended round shapes for a more pet friendly environment.*
Round Waste & Recycling Bins | Infinity Bins. n.d. Accessed 2 May 2024. https://max-r.com/waste-and-recycling-bins/infinity/.

Fig. 3.62 - [77] *Axonometric view of a canine-friendly landscape design in front of a building.*
Created by Author.

Fig. 3.63 - [79] *Floor plan callout of a canine-friendly landscape design in front of a building.*
Created by Author.

Fig. 3.64 - [79] *Detail of pet relief area integrated in landscaping design with privacy wall.*
Created by Author.

Fig. 3.65 - [80] *Detail of typical raised planted bed with enrichment walking path.*
Created by Author.

Fig. 3.66 - [80] *Detail of typical multilevel wood deck for encouraged physical enrichment.*
Created by Author.

Fig. 3.67 - [81] *Example of playful landscaping with angles and soft geometric shapes for the grass.*
Pinterest. n.d. Accessed 2 May 2024. https://www.pinterest.ca/kongbai0272/landscape/.

Fig. 3.68 - [82] *Example of a playful multi-level wood deck along landscape edge.*
(241) Pinterest. n.d. Accessed 2 May 2024. https://www.pinterest.ca/pin/1829656091016481/.

Fig. 3.69 - [82] *Example of integrated pet relief area in landscaping design.*
Pet Relief Area. n.d. Accessed 2 May 2024. https://www.dog-on-it-parks.com/blog/making-pet-travel-pawesome/pet-relief-area/.

Section B: Above Grade Best Practices

Fig. 3.70 - [83] *Axonometric view of a typical interior pet relief area.*
Created by Author.

Fig. 3.71 - [85] *Floor plan callout of a typical interior pet relief area.*
Created by Author.

Fig. 3.72 - [85] *Typical section detail of an interior pet relief area.*
Created by Author.

Fig. 3.73 - [86] *Example of interior pet relief area in El Paso International Airport (ELP).*
El Paso International Airport (ELP) Pet Relief Areas. n.d. Accessed 12 June 2024. https://petfriendlytravel.com/pft_airports/el-paso-international-airport-elp-pet-relief-areas/.

Fig. 3.74 - [86] *Example of interior pet relief area in Hartsfield-Jackson Atlanta International Airport (ATL).*
Hartsfield-Jackson Atlanta International Airport (ATL) Pet Relief Areas. n.d. Accessed 2 May 2024. https://petfriendlytravel.com/pft_airports/hartsfield-jackson-atlanta-international-airport-atl-pet-relief-areas/.

Fig. 3.75 - [86] *Example of interior pet relief area in Bradley International Airport (BDL).*
Bradley International Airport (BDL) Pet Relief Areas. n.d. Accessed 2 May 2024. https://petfriendlytravel.com/pft_airports/windsor-locks-bradley-international-airport-pet-relief-areas/.

Fig. 3.76 - [87] *Axonometric view of a typical interior off-leash area with an exterior portion.*
Created by Author.

Fig. 3.77 - [89] *Floor plan callout of a typical interior off-leash area with an exterior portion.*
Created by Author.

Fig. 3.78 - [89] *Typical section detail of interior OLA with a public seating and workstation for the owner.*
Created by Author.

Fig. 3.79 - [91] *Example of OLA outdoor terrace section that can be opened during nice weather conditions in Xavier Residence Tower in Chicago.*
Xavier - 625 W Division St | Chicago, IL Apartments for Rent | Rent. n.d. Accessed 2 May 2024. https://www.rent.com/illinois/chicago-apartments/xavier-4-lnp001E000000yO3iGIAS?__cf_chl_tk=17iDtJQTZVFordBM0EMMGUYPF9.DokmFUn_shwlyIjg-1714680272-0.0.1.1-1471.

Fig. 3.80 - [91] *Example of indoor OLA dog space in Xavier Residence Tower in Chicago.*
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Section C: Unit Design Best Practices

Fig. 3.85 - [94] *Floor plan of typical unit with canine-inclusive interventions.*
Created by Author.

Fig. 3.86 - [95] *Axonometric view of a typical unit entrance with mud room.*
Created by Author.

Fig. 3.87 - [96] *Floor plan callout of a typical unit entrance with mud room.*
Created by Author.

Fig. 3.88 - [97] *Typical section elevation detail of wall-recessed sliding gate.*
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Fig. 3.89 - [97] *Typical section detail of wall-recessed sliding gate between studs.*
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Fig. 3.90 - [98] *Example of pocket dog gate.*
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Fig. 3.95 - [99] *Axonometric view of a typical unit kitchen with an integrated canine food and water station in the millwork.*
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Fig. 3.96 - [100] *Floor plan callout of a typical unit kitchen with an integrated canine food and water station in the millwork.*
Created by Author.

Fig. 3.97 - [101] *Typical section of the integrated canine food and water station, showing the modularity and height adjustability for dogs of different sizes.*
Created by Author.

Fig. 3.98 - [101] *Typical elevations of the integrated canine food and water station, showing the fresh water spout on the side.*
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Fig. 3.101 - [103] *Axonometric view of a typical canine crate integrated and recessed in the wall with storage above.*
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Fig. 3.102 - [105] *Floor plan callout of a typical canine crate integrated and recessed in the wall.*
Created by Author.

Fig. 3.103 - [105] *Typical wall section of a canine crate integrated and recessed in the wall with storage above.*
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Fig. 3.108 - [108] *Floor plan callout of a typical seating ledge integrated with the windowsill.*
Created by Author.

Fig. 3.109 - [109] *Typical section of a canine seating ledge along the windowsill.*
Created by Author.

Fig. 3.110 - [109] *Typical section of a canine seating ledge along the windowsill with storage underneath it.*
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Fig. 3.116 - [112] *Floor plan callout of an innovative double skin façade system that gives agency to dogs to enter and exit the balcony.*
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Fig. 3.123 - [115] *Axonometric view of typical living room space with an enrichment path implemented against the wall behind the couch.*
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Fig. 3.124 - [116] *Floor plan callout of a typical living room space with an enrichment path implemented against the wall behind the couch.*
Created by Author.

Fig. 3.125 - [117] *Typical section elevation detail of the canine accessible stairs for the enrichment path.*
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Fig. 3.126 - [117] *Typical section detail of the enrichment path behind the couch.*
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Fig. 3.129 - [119] *Axonometric view of typical living room space with a linear play space as a result of the furniture layout.*
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Fig. 3.130 - [120] *Floor plan callout of a typical living room space with a linear play space as a result of the furniture layout.*
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Fig. 3.134 - [122] *Picture of Truffles as a puppy, sleeping on her favourite carpet.*
Captured by Author.

Fig. 3.135 - [124] *Typical floor plan of condominium unit, highlighting all the storage opportunities.*
Created by Author.

Section D: Assembly Schedules

Fig. 3.136 - [127] *Typical wall partition P1 for interior walls within the unit.*
Created by Author.

Fig. 3.137 - [128] *Typical wall partition P2 for acoustically separated rooms within the unit.*
Created by Author.

Fig. 3.138 - [128] *Typical wall partition P3 for acoustically separating units from other units/public hallways.*
Created by Author.

Fig. 3.139 - [128] *Typical wall partitions P4 for exterior assemblies.*
Created by Author.

Fig. 3.140 - [130] *Typical ceiling assembly C1 for standard rooms that don't require acoustic separations.*
Created by Author.

Fig. 3.141 - [130] *Typical ceiling assembly C2 for standard rooms that do require acoustic separations.*
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Fig. 3.142 - [131] *Typical floor assembly F1 for residential condo units.*
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Section E: Overall Support Information

Fig. 3.143 - [136] *Example of magnesium chloride pellets.*
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Fig. 3.153 - [140] *Example of vinyl flooring. Ideal for rest spaces and low traffic/private area such as individual units. Also ideal for areas anticipated to get wet.*
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Fig. 3.169 - [146] *Picture of Truffles as a puppy, sitting on the sidewalk.*
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Fig. 3.170 - [148] *Example of Autumn Crocus.*
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Fig. 3.172 - [148] *Example of Chrysanthemum.*
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Fig. 3.173 - [148] *Example of Daffodils.*
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Fig. 3.174 - [149] *Example of English Ivy.*
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Fig. 3.175 - [149] *Example of Lily of the Valley.*
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Fig. 3.177 - [149] *Example of Sago Palm.*
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Fig. 3.178 - [150] *Example of Tulips.*
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Fig. 3.180 - [150] *Example of Yew.*
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Chapter 4.0 | Harmonious Intervention

Fig. 4.1 - [154] *Typical residential coop unit, showing the morning routine of a dog and owner once they wake up.*
Created by Author.

Fig. 4.2 - [156] *Typical residential floor in tower, showing the morning routine of a dog and owner after they leave their unit and head for the elevator.*
Created by Author.

Fig. 4.3 - [157] *Conceptual render of the elevator waiting area, featuring a variety of canine centric elements such as the enrichment ramps in the corridors and wide walking area.*
Created by Author.

Fig. 4.4 - [159] *Key plan of the ground floor plan in Liberty Village.*
Created by Author.

Fig. 4.5 - [160] *Callout floor plan of typical ground level, showing the path taken in the morning from the elevator to the designated canine entrance.*
Created by Author.

Fig. 4.6 - [161] *Conceptual render of the lobby atrium, featuring high ceilings, lots of natural light, a beautiful view of the OLA on site. This area offers a wide open space to not only lounge, but also to encourage play encounters between dogs in the building.*
Created by Author.

Fig. 4.7 - [162] *Conceptual render of the canine designated entrance from the exterior, featuring an architectural arcade and large sidewalk path integrated in the landscaping as a smoother buffer between the building and the road.*
Created by Author.

Fig. 4.8 - [163] *Key plan of the ground floor plan in Liberty Village.*
Created by Author.

Fig. 4.9 - [164] *Callout floor plan of typical ground level, showing the path taken by the dog and owner to the designated pet relief area on site beside the entrance. Situated at the back of the site, this area is designed to be both welcoming and safe. It features familiar objects like a fake fire hydrant and soft landscaping, creating a comfortable environment for dogs. A hose bib is available for easy cleaning, and the synthetic turf ensures proper drainage.*
Created by Author.

Fig. 4.10 - [166] *Conceptual render of the canine designated pet relief area on grade, featuring plenty of space for dogs to do their business. Providing this canine facility not only serves the building tenants, but also the surrounding community.*
Created by Author.

Fig. 4.11 - [167] *Key plan of the site plan in Liberty Village.*
Created by Author.

Fig. 4.12 - [168] *Callout plan of the off leash area (OLA) dog park on site, featuring plenty of enrichment opportunities for dogs. The right side is designated for smaller or more timid dogs, while the left side is reserved for larger or more outgoing dogs. Signage at each entrance explains the rules and etiquette of the space. The main larger off-leash area (OLA) features various surface options, including a sand pit, grass, mulch, interlocking pathways, and a water splash pad for hot summer days. Numerous trees provide ample shade for resting, and there are plenty of agility and enrichment obstacles throughout for both mental and physical stimulation.*
Created by Author.

Fig. 4.13 - [169] *Conceptual render of the off leash area (OLA) dog park view from the north entrance, featuring permeable paver interlocking on the main walking path.*
Created by Author.

Fig. 4.14 - [169] *Conceptual render of the off leash area (OLA) dog park view from the west entrance, featuring the water splash pad on one side of the walking path and the grassy fetch area on the other.*
Created by Author.

Fig. 4.15 - [170] *Conceptual render of the off leash area (OLA) dog park, featuring the grassy area and sand pit with agility obstacles dispersed throughout.*
Created by Author.

Fig. 4.16 - [171] *Key plan of the site plan in Liberty Village.*
Created by Author.

Fig. 4.17 - [172] *Callout plan of the playful landscaping along the perimeter on site, featuring plenty of enrichment opportunities for dogs. Raised planter beds are strategically placed to discourage dogs from urinating on plants, while integrated relief areas encourage them to use designated spaces. Additionally, there are also multi level wooden decks designed with the planters to add to the playfulness of the circulation.*
Created by Author.

Fig. 4.18 - [174] *Conceptual render of the perimeter landscaping around the site from the corner of Liberty Street and Hanna Avenue, featuring the raised planter beds and multi level wooden decks.*
Created by Author.

Fig. 4.19 - [176] *Key plan of the ground floor plan in Liberty Village.*
Created by Author.

Fig. 4.20 - [176] *Callout floor plan of the ground level, showing the path taken from the north entrance to the elevator while engaging with the enrichment paths on the side.*
Created by Author.

Fig. 4.21 - [177] *Conceptual render of the main corridor on ground level from the west entrance, featuring plenty of space for circulation, along with enrichment paths on each side for mental and physical stimulation.*
Created by Author.

Fig. 4.22 - [178] *Conceptual render of the main corridor on ground level, featuring the canine accessible feature stairs on the right.*
Created by Author.

Fig. 4.23 - [180] *Typical residential coop unit, showing the path taken by the dog during the day after coming back from their morning walk and left home alone while the owner goes off to work.*
Created by Author.

Fig. 4.24 - [182] *Typical recreational level in the tower, showing the path taken by the dog when the owner is able to work from home and use the gym during their lunch break. This floor includes a fitness center, a party room, and an off-leash area for dogs.*
Created by Author.

Fig. 4.25 - [183] *Conceptual render of the above grade off leash area (OLA) on the recreational level, featuring a view from the entrance. As you walk in, you'll find the main seating area on the left that overlooks the OLA, and kitchenette and washing stations on the right.*
Created by Author.

Fig. 4.26 - [184] *Conceptual render of the above grade off leash area (OLA) on the recreational level, featuring a view of the outside play area. The space is equipped with abundant agility equipment and obstacles, complemented by sliding accordion glass panels that can open and close to create a seamless indoor-outdoor transition, adapting to different weather conditions.*
Created by Author.

Fig. 4.27 - [185] *Key plan of the podium rooftop level 3 floor plan in Liberty Village.*
Created by Author.

Fig. 4.28 - [186] *Callout floor plan of the 3rd level (rooftop podium), showing the path taken from the elevator by a dog to utilize the above grade off leash area (OLA). As a more private and personal play option only available for the building tenants, the in-house dog walking service utilizes this space to exercise dogs.*
Created by Author.

Fig. 4.29 - [187] *Conceptual render of the above grade off leash area (OLA) on the 3rd level, featuring the secondary entrance to the room. As you enter, you'll find the kitchenette and dog washing station area on the right, and the OLA towards the left.*
Created by Author.

Fig. 4.30 - [187] *Conceptual render of the above grade off leash area (OLA) on the 3rd level, featuring the primary entrance to the room. As you enter, you'll find the play area entrance on the left with the seating area in front that overlooks the play area. With plenty of obstacles, toys and agility equipment available for use, the play area offers a length size to allow for optimal indoor fetch if desired.*
Created by Author.

Fig. 4.31 - [188] *Conceptual render of the above grade off leash area (OLA) on the 3rd level, featuring the outdoor portion of the play area. Since this space is located on the podium roof top, it has been set back from the building edge for safety and is only accessible to building tenants to offer a more private option for play. There are accordion glass panel doors that can open to create a seamless transition between the interior and exterior play areas when weather permitting.*
Created by Author.

Fig. 4.32 - [189] *Key plan of the level 2 floor plan in Liberty Village.*
Created by Author.

Fig. 4.33 - [190] *Callout floor plan of the 2nd level, showing the path taken by the dog to enter the in-house doggy daycare play room, before being brought to the front reception desk by employees to be picked up. This in-house daycare is just one of many canine facilities to help support the building tenants as well as the surrounding community.*
Created by Author.

Fig. 4.34 - [191] *Conceptual render of the ground floor level, featuring the landing of the canine accessible feature stairs.*
Created by Author.

Fig. 4.35 - [192] *Conceptual render of the second level in-house doggy daycare, featuring one of the play areas. There are 3 different play areas, each equipped with obstacles and agility equipment to cater to different sized dogs.*
Created by Author.

Fig. 4.36 - [191] *Conceptual render of the second level public corridor, featuring lots of space for circulation and a railing overlooking the atrium lobby.*
Created by Author.

Fig. 4.37 - [194] *Typical residential coop unit, showing the path of the dog after being brought back home after a long day from daycare.*
Created by Author.

Fig. 4.38 - [195] *Key plan of the typical tower residential floor plan in Liberty Village.*
Created by Author.

Fig. 4.39 - [196] *Callout floor plan of the typical tower residential coop level, showing the path taken in the evening for the nighttime routine. The designated pet relief area around the corner offers convenience and support for the building tenants.*
Created by Author.

Fig. 4.40 - [197] *Conceptual render of the elevator waiting area on a typical tower floor, featuring plenty of lounge space for building occupants.*
Created by Author.

Fig. 4.41 - [200] *Typical residential coop unit, showing the path taken at the end of the night after completing the finally potty.*
Created by Author.

Chapter 5.0 | Next Steps

Fig. 5.1 - [205] *Matrix to breakdown the feasibility and cost analysis for each individual proposed design intervention in this guideline.*
Created by Author.

Fig. 5.2 - [219] *Picture of Truffles smiling in the hands of his owner.*
Captured by @Goodwolf Studios.





CHAPTER 1.0

RECOGNIZING REALITY

1.1 | BACKGROUND CONTEXT & RATIONALE

With the societal shift of coexisting with dogs on the rise, architectural design should adapt and cater to the needs of both humans and canines in residential typologies, which at it's core dictates what the fundamental ingredients are when spatially designing our homes. As of 2022, Statistics Canada recorded 7.6% of the nation's total population living in its largest city, Toronto (Government of Canada 2023). The rapid growth over the past few years to approximately 3 million people naturally lead to the growth of its canine population in the city (Government of Canada 2023). The Canadian Animal Health Institute (CAHI) confirmed in it's nation-wide survey of over 4000 pet owning households that the pandemic acted as a catalyst to pet ownership, increasing the dog population in Canada from 7.7 to 7.9 million just between 2020 and 2022 (CAHI 2023). While no formal dog census has been preformed specifically for the city of Toronto, city counsellor Chris Moise said in an interview with CTV News, "As of currently, there's about 300 000 dogs in Toronto and growing…" (Freeman 2023). Mathematically, this equates to 1 in 10 people in Toronto having at least 1 dog in their household. But what exactly does this mean?

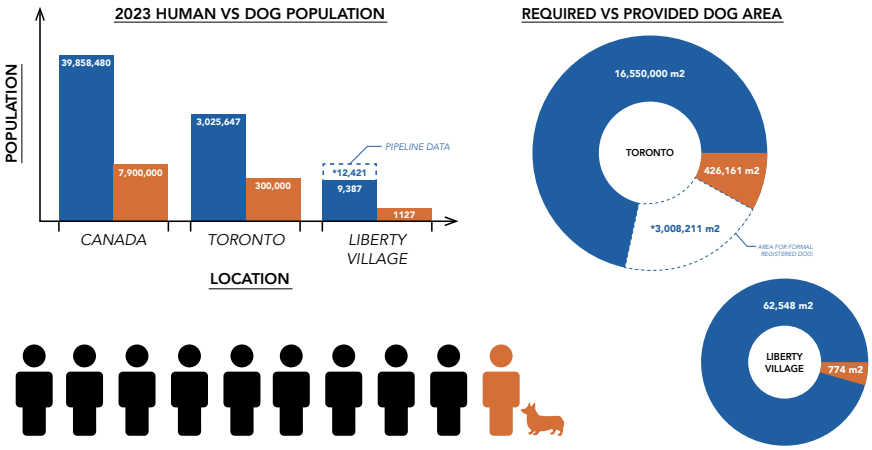
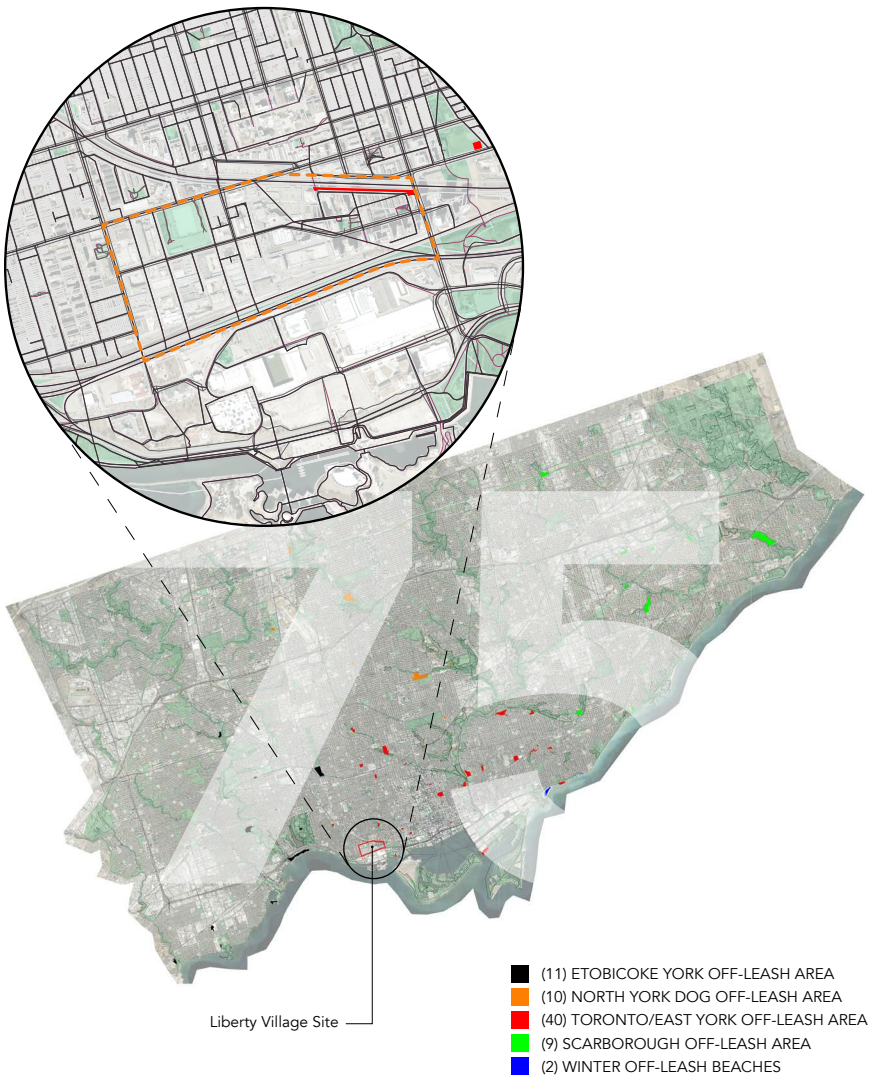


***FIG 1.1** [LEFT]*

Canadian statistics graphically represented to show the ratio of dogs to people, a 2023 population comparison between human to dog and a comparison between the required vs dog area in the city

FIG 1.2 *[RIGHT]*

A site map of Toronto outlining all 75 existing off-leash areas (OLAs) for dogs. The call out area shows a zoomed in site plan view of Liberty Village.



Currently, Toronto has 75 official off-leash dog parks dispersed throughout (Toronto 2019), ranging in different sizes from Corktown Commons as the smallest, measured at 422 square meters, to Riverdale Park West as the largest, measured at 45000 square meters (4.5 hectares). The total surface area of the 75 dog parks can be summed up to approximately 426 161 square meters which may seem like a lot in hindsight, but if compared to the canine occupancy requirements set by the Fairfax County in America (Fairfax County 2019), we can deduce that there isn't nearly enough to properly sustain all the dogs in Toronto. Since their government seems to be the only ones who has provided official documentation with this information, their values have been used as a benchmark for this analysis. They state that the area a dog requires in a park is 46 to 65 square meters, therefore the average per dog is approximately 55.5 square meters (Fairfax County 2019). Using this metric value in a quick calculation for Toronto's canine population results in a 97.4% deficit since the total area provided by the 75 current dog parks only sustains 7679 dogs.

	DOG PARK	AREA (m2)
	Marie Curtis Park	4,764
	Colonel Sam Smith Park	4,118
	Don Russell Memorial Park	16,510
	Humber Bay Park West	6,227
	King's Mill Park	12,738
	Raymore Park	3,781
Etobicoke	Woolner Park	2,450
	Beresford Park	2,805
	Sir Casimir Gzowski Park	1,678
	High Park	32,346
	Sorauren Avenue Park	1,623
	Baird Park	902
	Earlscourt Park	1,785
	Cedarvale Park (Seasonal)	4,390
	Cedarvale Park (Year Round)	4,838
	Wychwood Car Barns Park	1,231
	Hillcrest Park	1,888
	Sir Winston Churchill Park	4,730
	Vermont Square	1,240
	Bickford Park	2,258
	Trinity Bellwoods Park	15,734
	Bill Johnston Park	774
	Stanley Park South	2,165
	Coronation Park	6,020
	Canoe Landing (Temporary)	532
	Clarence Square	1,971
	St. Andrew's Playground	545
	Grange Park	624
	Ramsden Park	2,372
	Barbara Hall Park	968
	Allan Gardens	2,650
	David Crombie Park	1,496
	Cherry Beach	38,806
	Corktown Common	422
	Orphan's Greenspace	1,695
	Thompson Street Parkette	917
	Regent Park	836
	Riverdale Park West	45,247
	Riverdale Park East	4,417
	Craigleigh Gardens	6,015
	Don Valley Brickworks	4,187
	Withrow Park	4,415
	Gerrard Carlaw Parkette	1,881
	Hideaway Park	480
	Greenwood Park	2,650
	Greenwood TTC Yard OLA	10,357
	Monarch Park	12,335
	Merrill Bridge Road Park	5,005
	Oakcrest Park	1,330
	Wildwood Crescent Playground	1,486
	Cassels Avenue Playground	6,129
	Norwood Park	1,654
	Kew Gardens (Beaches Park)	22,774
	Silverbirch Park	13,844
	Stan Wadlow Park	2,178
	Coxwell Ravine (Taylor Creek Park)	1,038
Toronto + East York	Woodbine Beach	13,844
	Linkwood Lane Park	2,226
	Sandy Bruce Park	2,392
	Sunnybrook Park	11,026
	Sherwood Park	4,475
	Woburn Park	532
	Yonge and York Mills	1,824
	Earl Bales Park	4,969
	G. Ross Lord Park	2,890
	Bayview Arena Park	2,629
North York	Dogsview Park (Dog Park)	8,094
	L'Amoureaux Park	2,353
	Hand of God	1,351
	Thomson Memorial Park	16,460
	Warden Woods Park	1,595
	Scarborough Heights Park	2,528
	Confederation Park	3,652
	Botany Hill Park	2,594
Scarborough	Colonel Danforth Park	2,476
	TOTAL =	426,161
	AVG DOG PARK SIZE =	5918.902778

FIG 1.3 *[LEFT]*

This chart breaks down all 75 OLAs in the city of Toronto into each of their quadrants and their respective surface area sizes. 28 OLAs are 2000 sqm and under, 28 OLAs are between 2000 sqm and 4999 sqm, 5 OLAs are between 5000 sqm and 9999 sqm, and 12 OLAs are 10000 sqm and up.

Liberty Village will be the focus site for this research due to its vibrant neighborhood reputation and rich historical value that can best represent the people of Toronto (Capital 2023). Previously an industrial area, it has undergone significant transformations over the past couple of decades and is now one of the city's trendiest and most desirable residential and commercial districts for dog owners (Capital 2023). The vast amount young couples who have populated the site along with their canine companions have increased in density so much to the point where they've earned the label as dinkwods – double income, no kids, with one dog. Statistics Canada recorded in their 2021 consensus that there were 9387 people in Liberty Village, which was projected to increase to about 12421 people in their pipeline data after the completion of all the condominium development on site (AreaVibes 2021). According to a CBC News article, there was a 40% increase in the dog population over 5 years by 2017 with 882 registered dogs and 1127 projected dogs in 2021 – a number that is believed to be significantly higher due to the anticipated quantity of pet owners who most likely have not registered their dogs (Smee 2018). While we don't know how true these numbers are, we do know that regardless of accuracy, the fact of the matter is that the canine population is growing in our society at a rapid rate and it should be acknowledged.

FIG 1.4 *[BELOW]*

An axonometric of Liberty Village, bounded by Dufferine Street to the west, King Street West to the north, Strachan Avenue to the east and the Gardiner Expressway to the south.



FIG 1.5 *[RIGHT - FACING]*

A photograph showing Truffles playing a little too close to Croquette in the winter of 2021. Due to the lack of adequate space for dogs, this image demonstrates one dog entering the personal space of another. Disclaimer - all dogs showed left unharmed following the capturing of this photo.

1.2 | STATEMENT OF PROBLEM

When analyzing how society's infrastructure is laid out, there seems to be a large disconnect between current architectural design and the well-being of our canine companions. This disconnect in conjunction with their fast population growth, is leading to cases of unsafe and even unclean environments for not only dogs, but also people. According to a CTV News article from August 9, 2023, troubling statistics were released by Toronto that showed in addition to the 1316 dog attacks, which was a 39% increase from 2021, there were more than 44 dangerous dog orders and 168 written warnings for bylaw violations (Freeman 2023). Another article by the CBC News back in 2018 also expressed concern specifically from locals in Liberty Village that there were serious conflicts between dog owners and parents looking for peaceful places for their children to play due to dog owners treating normal parks like off-leash areas (Smee 2018). Numerous other articles display similar ongoing struggles in society, which all seem to stem from one main issue: lack of space for dogs. Sidewalks are narrow, parks are too small and there simply just aren't enough dog designated off-leash spaces for them to run, play and be what they are naturally meant to be – an animal. City counsellor Gord Perks said in the same 2018 CBC News article, "We're trying to imagine new ways of designing condominiums so there are amenities for dogs… the problem is that a lot of our neighbourhood parks are really small parks." (Smee 2018) Whether he was aware or not of the weight his statement had, I think Perks was onto something with regards to how we can affect change in a meaningful way in the city. Knowing what we know now 5 years later with the architectural knowledge and advancement in technology, I believe that we can take Perks initial suggestion a step further than simply implementing more amenity spaces in a building but redesign the building as a whole to be completely in consideration and inclusive to our canine companions.



1.3 | CURRENT RESPONSES

Throughout society, there is a notable acknowledgment and embrace of the coexistence with our canine companions, manifested through various initiatives and accommodations. Regardless of the scale or sector, the following shows a small example of the canine presence in our community today.

The public sector includes airports now featuring designated pet relief areas, catering to the needs of traveling pet owners. As pets are becoming more integrated into travel, companies such as BarkAir provide pet friendly options so that your canine companions don't have to be stuck in cargo. Similarly, there's a growing trend in the hospitality sector, with many Airbnb listings and hotels embracing pet-friendly policies, often accompanied by a dog cleaning fee. While legal restrictions prevent animals inside industries related to food (i.e. restaurants and grocery stores) for sanitation and health reasons, there's a shift in the dining landscape as some establishments, including Miga Korean BBQ and OEB Breakfast Co. in Liberty Village, extending their hospitality to dogs by allowing them on patios and even providing dog bowls. Even the small business recreational sector is becoming more pet-inclusive, with some dog friendly golf courses and concepts like puppy yoga. In workplaces, the

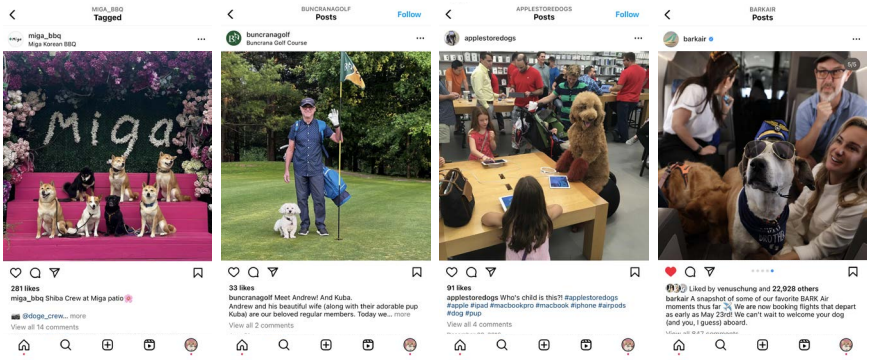


FIG 1.6 *[LEFT]*

Instagrams posts examples of different businesses marketing their involvement with the canine community.


Forbes

FORBES > REAL ESTATE

These Homeowners Are Creating Unique Spaces For their Pets

Michelle Hofmann Former Contributor

I specialize in real estate features, trends, and celebrity homes.

Dec 6, 2021, 12:51am ES

FIG 1.7 *[RIGHT - LEFT]*

An article showing home owner, Jognathan Lower, taking initiative to DIY a personal space for his dog, Teddy. A few design tips he learned:

- Utilize spaces you normally wouldn't use (i.e. below stairs)
- raised bed for storage underneath for Teddy's toys
- sound proofing walls to create safe space away from fireworks
- TV installed for white noise to calm Teddy down when alone.

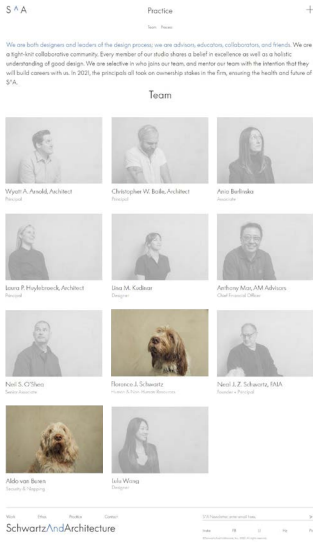


FIG 1.8 *[RIGHT - RIGHT]*

Coorperate offices such as S^A have begun to recorgnize dogs as part of their team.

presence of "office dogs" is becoming increasingly common, contributing to a positive work environment. These dogs often take on symbolic roles, becoming a recognizable part of the company culture and sometimes even featuring prominently on the company's website.

The retail sector beyond dedicated pets stores has seen a huge surge in pet-inclusivity, each with their own set of rules. Decathlon stands out as an unequivocal supporter of canine visitors through their formal pet policy (Decathalon 2023), while stores like Best Buy (Malaker 2023), Home Depot (Cosgrove 2020), TJX Company Inc. (Winners, HomeSense, Marshalls) (Lutz 2023), Apple , and Canadian Tire technically state that only service dogs are allowed, but in reality is actually location dependant (W 2023). Interestingly, some stores like TJX Company Inc. practice informal techniques by marketing on social media that they allow all dogs to enter. In addition to their pet policies, dogs are acknowledged through inclusive fashion, toy lines, and accommodating furniture lines like the pet friendly upholstery selection at Crate and Barrel ('Pet Friendly Upholstery | Crate & Barrel Canada', n.d.).

At the urban scale level, Toronto is already acknowledging the canine population increase by exploring ways to improve it's existing 75 off leash dog parks and is already on phase 2 where assessments of the physical conditions will be completed to see what improvements can be made (Toronto 2019). Canine dense sites such as Liberty Village in Toronto (AreaVibes 2021), is also great example of responding to the population growth, adopting 5 dog walking companies, 1 dog park, 1 central animal hospital, 2 dog daycares, and 5 pet retail stores, all within a 0.6 km radius. But why stop there? Can't our architectural design adapt as well at the building scale to accommodate and be inclusive toward dogs? What about at the micro detail scale? Homeowners, like Johnathan Lower, have already taken the initiative into their own hands to DIY personal spaces for their dog over the pandemic (Hofmann 2021), which already begins to show that society is ready for an architectural shift. While condo living is slowly evolving with the introduction of the 2019 Pet Friendly Design Guideline (Toronto 2018), it can be taken to the next level for deeper canine inclusivity.

1.4 | RESEARCH QUESTION

At the core of this research, the question of "why is modern day architecture neglecting my dog" arises and as silly as it may initially sound, it begins to poke at something significant that seems to be overlooked at a quick glance. Take another step down the rabbit hole and you begin to ask questions like, "what is a dog?"; "what is a pet?"; "what is house?" or even "what is a home?". I may not be an expert in animal behavior but having my dog be a part of my life the past 3 years has opened my eyes and arguably changed my life. Psychology and philosophy have always piqued my interest on the daily, guiding me to ask constant questions of "why" or "how" towards my dog – Truffles – in order to better understand her to try and give her the best life she deserves. I will always remember what Niel Degrasse Tyson said in a (@dropoutspodcast) podcast with Zach and Jared,

"Dogs, don't live as long as we do. An old dog is 14… We live until we're 90 if we eat well or wear a seatbelt. So you divide the two and get a factor of 7. This is where the 7 dog years formula comes from… but is there any deeper meaning to it? It means, every single day a dog lives, is equivalent to a week of your life. That's a 7:1 ratio. So if they only get 1 day for every week of your life, they make every day count."

Resonating with this philosophy and combining it with my expertise in this professional discipline has opened pandora's box to challenging the re-imagining of modern day residential architecture to be inclusive for both people and our canine companions, leading to the following research question:

"How can we reimagine tall residential buildings in high density North American urban cities to ensure inclusivity for our canine companions?"

Now that we've established the context in this chapter, the next chapter begins to explore the development of the canine inclusive design guide. In doing so, we need to figure out the how, which leads to the following question:

> *"Can I successfully create a canine inclusive design guide by understanding the **Umwelt** of dogs?"*







CHAPTER 2.0

UNDERSTANDING THE CANINE UMWELT

2.1 | CANINE BEHAVIOUR PSYCHOLOGY & PHYSIOLOGICAL LIMITATIONS

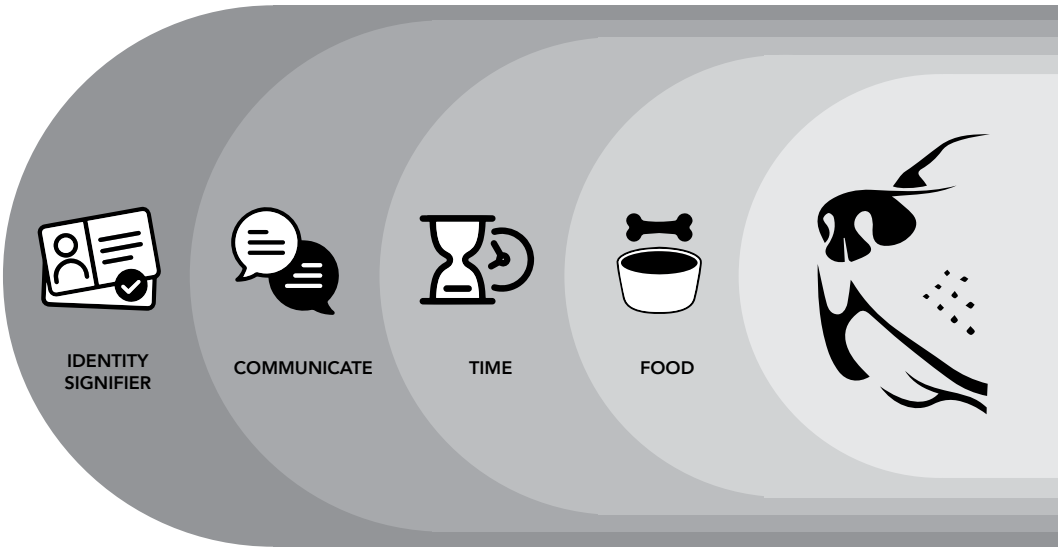
Within the last few decades, the relevance of knowledge around dogs has grown exponentially, whereas previously there were only a handful of canine cognition and behavior studies formally completed (Horowitz 2016). Today, it can be said that dogs have finally been recognized as creatures worth understanding when you consider the initiatives taking place such as global canine conferences, research groups dedicated to canine analysis, experimental and ethological studies of dogs around the world, and scientific journals occasionally referencing canine research finding throughout (Horowitz 2016). While there is still a lot to be discovered in our understanding of dogs, professionals and scientists like Jakob von Uexkull, Alexandra Horowitz, Donna J. Haraway and Marc Bekoff have all contributed vast amounts of information to help us begin scratching the surface of what it is like to live in their world.

A large challenge in this research is accounting for not only the 150+ varying dog breeds registered under the American Kennel Club (Horowitz 2016), but also for varying sizes, varying ages, and varying origins – for example, whether or not they're purebred or rescued from overseas. Naturally, it's easier to generalize amongst all dogs, but the reality is that dogs have a sense of individuality just like humans do. What appeals to one dog may not appeal to the next. Similarly, the actions of one dog do not equate to the actions of all other dogs. With this in mind, this research aims to maintain a holistic perspective on dogs without compromising their individuality and distinctive traits, while also delving into the fundamental aspects of their species. This entails a deep dive into the science of their physiology and the intricate ways in which it shapes their sensory experiences within their surrounding environments as the most effective way to understand their species as a whole.

It should be no surprise that dogs are creatures of the nose who possess a highly developed sense of smell. This distinction is not only due to differences in their physical make-up, with breeds like beagles having 300 million receptor sites compared to humans only having 2 million, but

FIG 2.1 *[RIGHT]*

A non-hierarchical diagram of the various things a dog can perceive from their olfactory senses.



also in mechanical function where they can continuously pull in fresh air through side slits, removing their need to have to exhale before inhaling (Bekoff 2019). Decoding olfactory cells to detect more smells is what most of their genes are dedicated to, which is even more prevalent when considering the fact that dogs have a "second nose" in their system – the vomeronasal organ which is a specialized sac above the mouth covered with more receptor sites (Horowitz 2016). This organ is the reason why dogs are drawn to licking everything under the sun, even if it is something as repulsive as fecal matter, urine, or a dead carcass on the side of the road. Their short physiology naturally makes them human-knee height, which means that they literally live in a different and much lower world that have plenty of potent scents we tend to miss. Similar to how we humans utilize sight to visualize the world, dogs utilize smells as their primary sense to identify signature odours that they associate with all people and objects (Horowitz 2016). Areas such as socks, crotches, and other dog butts are prime locations for capturing these olfactory signatures, which is why canine greetings often commence with the ritualistic and thorough sniffing of these regions. Communication between their species also occurs greatly through sniffing, which is exemplified through urine marking or as Marc Bekoff calls, "pee mail" (Bekoff 2019). This is the act of occasionally marking the ground with urine for other dogs as a way to let them know that they were there. Sniffing will take place amongst these areas, followed by overmarking for the next dog to find. Moreover, while dogs have their own internal clock that allows them to develop habits and schedules, they can perceive time through their sense of smell, discerning newness and age of scents (Horowitz 2016). Stronger scents imply recency, while a weaker one indicates staleness, which is how dogs can tell when their owner have been away from home for a certain amount of time.

As a secondary sense, sight is still a part of the canine world, however it is not the exact same as ours. For starters, while humans use the Snellen Fraction of 20/20 to represent the visual quality of perfect eyesight, dogs can only see 20/75 which means that they can only see at 20 feet what people see at 75 feet (Bekoff 2019). In addition to their struggles to

see details, colors too are limited. Contrary to the long-held belief that dogs see only in black and white, recent research suggests that they can distinguish between yellow and blue (Meyers 2021). They may not have the greatest eye sight, but where they lack in visual acuity, they gain in other areas such as better night time sight (approximately 5 times better than humans), better peripherals if they have longer snouts, and better perception to motion due to their higher flicker fusion rates – the number of snapshots of the world they see per second (Horowitz 2016). This is a result of the large quantities of rods in their retinas (3 times more than humans) which respond most in low light situations and changes in light densities - i.e. motion. Anna Scandurra, a researcher and colleague of Marc Bekoff, understood this about dogs and conducted a study to test the effectiveness of visual versus verbal cues and concluded that majority of dogs follow the visual cues regardless of contradicting verbal ones (Bekoff 2019).

However, beyond the canine physiology of sight of why they see things, it is as important to understand how they see things and this begins by understanding the 2 category of images they interpret: (1) perception images and (2) effect images (Uexküll 2010). Perception images are the images that the object portrays to the subject in response to the neutral object's tone. For instance, when viewing a chair, naturally one perceives it as a piece of furniture for sitting. On the other hand, effect images occur when the subject's past experiences of the object modify the perception image, imbuing it with additional meaning or purpose to create a new "effect tone". For example, if one intends to use the same chair as a stepping stool to reach the top of a shelf, the chair's perception image of being a seat is then supplemented with an "effect image" of a "climbing tone," reflecting the subject's prior use of it. That being said, a dog does not see everything in a room because not every object has meaning to

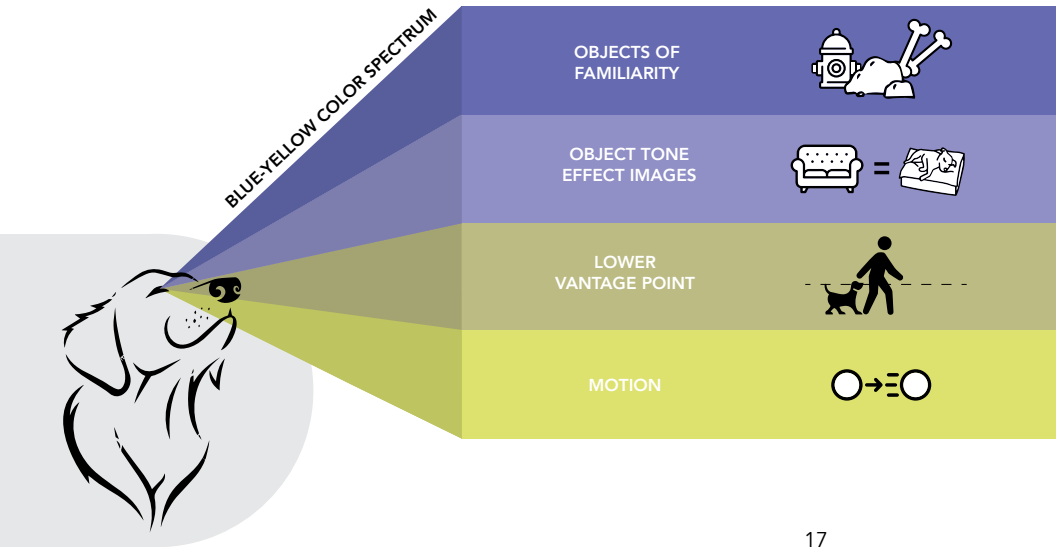


FIG 2.2 *[LEFT]*

A non-hierarchical diagram of the various things a dog can perceive from their sense of sight.

it. Jakob von Euxkull states, "Only when we take the effect tones into account can the environment take on the security for the animals that we admire in it. We may say that an animal is able to distinguish as many objects as it can carry out actions in its environment. If it has only a few actions and a few effect images, its environment will then consist of few objects. The environment is thereby impoverished but is also all the more safe for it, for it is much easier to orient oneself among few objects than among numerous objects."(Uexküll 2010). Understanding the library of effect images a dog has means understanding which objects they are perceiving.

As the third and final sense, the significance of hearing tends to be forgotten when thinking about dogs. Their hearing sensitivity is up to 4 times more than humans, roughly enabling them to detect sounds at 8 feet what we can only hear at 20 feet. This also allows them to hear more due to their ability to process higher frequencies up to 67000hz while humans can only hear up to 64000hz (Bekoff 2019). In addition to their brain being able to process words (left hemisphere) and intonations (right hemisphere), there are more than 18 muscles to control the Pinna (ear flap) that not only allow for maximum expressiveness but also allows for directional sounds to be picked up effectively. They may not be as accurate to pinpointing the origin of sounds as humans are, but their auditory senses guide them in the general vicinity until their stronger senses of sight and smell take over (Horowitz 2016). Lastly, a dog's knee-height nature and proximity to the floor heightens their sensitivity to mechanical vibrations travelling through hard surfaces (Horowitz 2016). Consequently, seemingly minor events for us, like dropping a small object or having a fan on the floor, can generate significantly louder and more disruptive stimuli for them than we may realize, which only further explains their common fear to extremely loud events like vacuuming, thunderstorms, and fireworks.

As the scientific community continues to expand on their knowledge of the canine, it is our responsibility to keep up to date with them if we want to better understand who they are and how they experience the world. Jakob von Uexkull was a pioneer of his time, suggesting the idea of subjectivity in biology and creating the concept of the Umwelt. If Umwelt can be defined as the environment a species of animal perceives according to its unique cognitive apparatus and that animal behaviour can thus be best explained if the environment is understood (Uexküll 2010), then by understanding the behavioural psychology of the canine, we can be best informed how to design an environment for them. By taking the time to analyze the canine physiology and psychology, steps can taken towards creating an architecture in our world that is canine inclusive.

2.2 | ETHOLOGICAL ANALYSIS

The next phase in this research explores a primary investigation of the canine umwelt by becoming an ethologist – someone who studies the behaviour of animals, typically in their natural habitat. My dog, Truffles J. Wong, will be the subject of focus for this analysis as she personally has experience living in a high-rise condominium as a 3-year-old, female, tricolored Pembroke Welsh Corgi.

The following pages show 6 forms I created to simplify my findings while accounting for different environments, different times and days, and different scenarios. Not only were these forms invented to further this research towards creating a canine inclusive design guide, but blank template copies of each form is available in the appendix of this thesis for anyone who desires to analyze their companion and understand them better.

def'n. ***Ethologist*** *//*

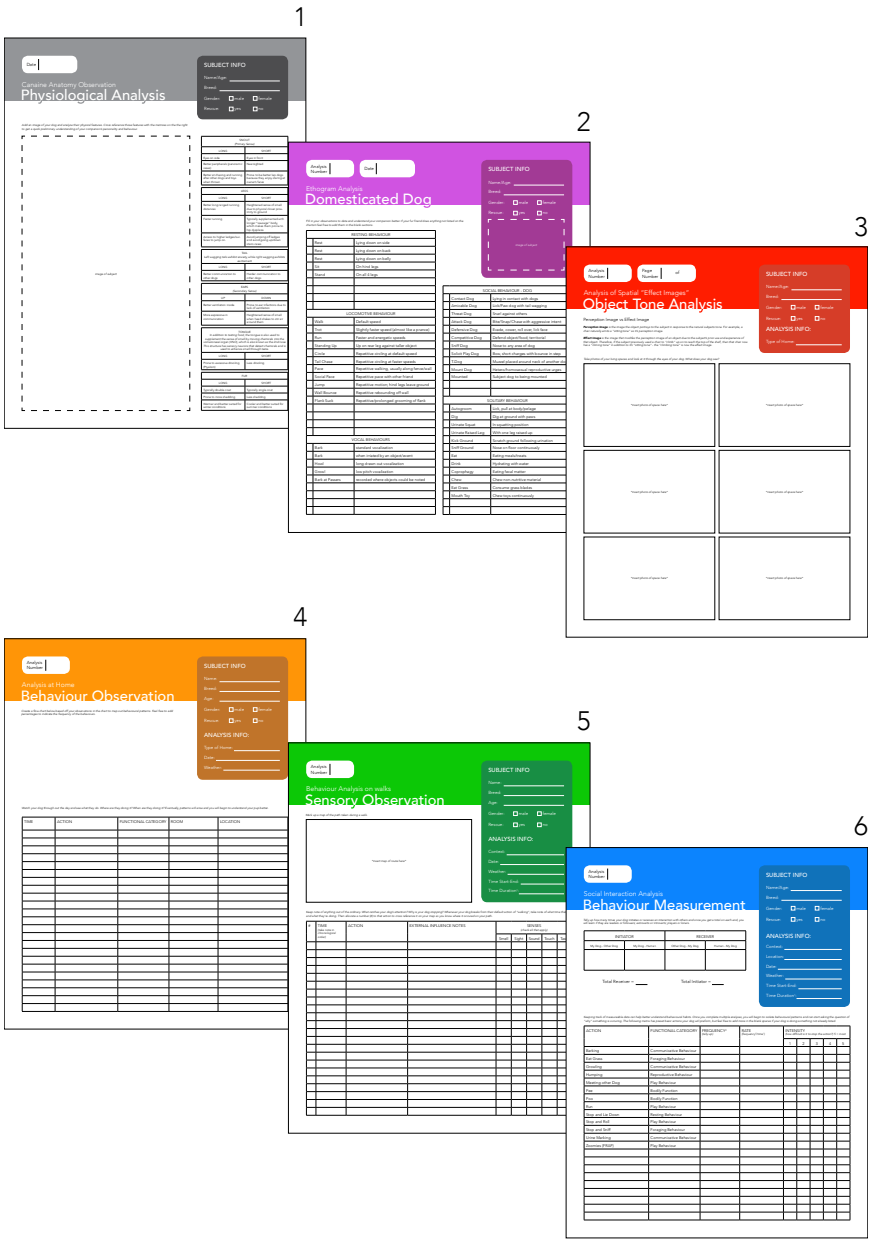
Someone who studies the behaviour of animals, usually in their natural habitat.

def'n. ***Ethogram*** *//*

A kind of menu of what animals do and can be focused on different environments and different times of day.

FIG 2.3 *[RIGHT]*

These are 6 ethogram forms to analyze your canine companion. Full sized blank templates can be found in the Appendix of this thesis to photocopy if you wish to "become an ethologist" and study your pet.



1. Canine Anatomy Observation (Physiological Analysis)
2. Domesticated Dog (Ethogram Analysis)
3. Analysis of Spatial "Effect Images" (Object Tone Analysis)
4. Analysis at Home (Behaviour Observation)
5. Behaviour Analysis on Walks (Sensory Observation)
6. Social Interaction Analysis (Behaviour Measurements)

Date | Mar. 11, 2024

Canaine Anatomy Observation

Physiological Analysis

SUBJECT INFO

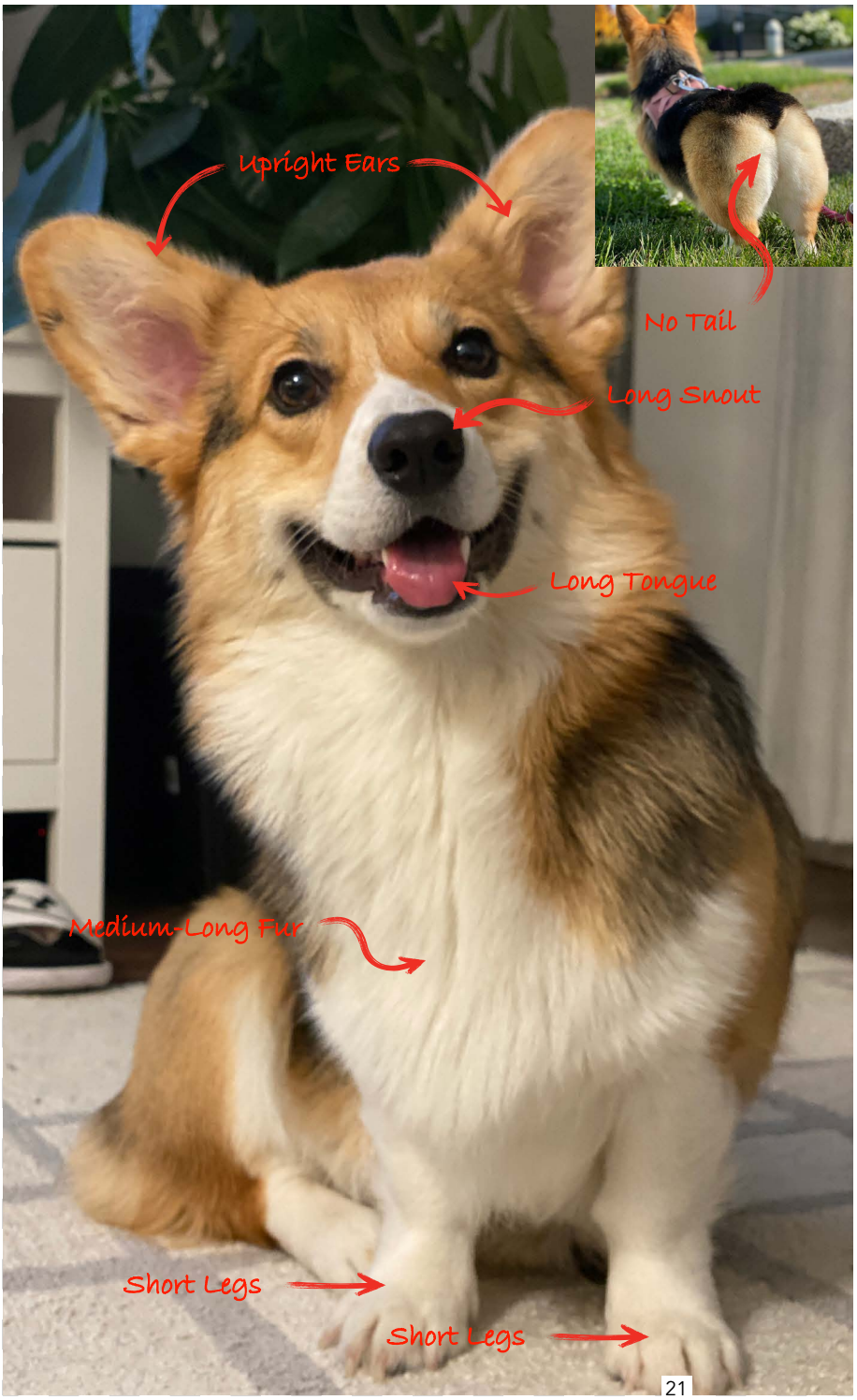
Name/Age: Truffles - 3 yrs

Breed: Pembroke Welsh Corgi

Gender: ☐ male ☒ female

Rescue: ☐ yes ☒ no

Add an image of your dog and analyze their physical features. Cross reference those features with the matrices on the the right to get a quick preliminary understanding of your companion's personality and behaviour.



SNOUT *(Primary Sense)*	
LONG	SHORT
Eyes on side	Eyes in front
Better peripherals (panoramic views)	Nearsighted
Better at chasing and running after other dogs and toys when thrown	Prone to be better lap dogs because they enjoy staring at owner's faces

LEGS	
LONG	SHORT
Better long ranged running distances	Heightened sense of smell due to physical closer proximity to ground
Faster running	Typically supplemented with longer "sausage" body, which makes them prone to hip dysplasia
Access to higher ledges/surfaces to jump on.	Avoid jumping off ledges and avoid going up/down stairs cases

TAIL *Left wagging tails exhibit anxiety, while right wagging exhibits excitement*	
LONG	SHORT
Better communication to other dogs	Harder communication to other dogs

No Tail

EARS *(Secondary Sense)*	
UP	DOWN
Better ventilation inside	Prone to ear infections due to lack of ventilation
More expressive in communication	Heightened sense of smell when head shakes to stir air around them

TONGUE *In addition to tasting food, the tongue is also used to supplement the sense of smell by moving chemicals into the vomeronasal organ (VNO), which is also known as the 2nd nose This structure has sensory neurons that detect chemicals and is used to enhance smell through taste.*	
LONG	SHORT
Prone to excessive drooling (Ptyalism)	Less drooling

FUR	
LONG	SHORT
Typically double coat	Typically single coat
Prone to more shedding	Less shedding
Warmer and better suited for winter conditions	Cooler and better suited for summer conditions

Analysis Number: 01

Date: Mar. 2, 2024

Ethogram Analysis

Domesticated Dog

SUBJECT INFO

Name/Age: Truffles - 3 yrs

Breed: Pembroke Welsh Corgi

Gender: ☐ male ☒ female

Rescue: ☐ yes ☒ no



Fill in your observations to date and understand your companion better. If your fur friend does anything not listed on the chartsm feel free to add them in the blank sections.

	RESTING BEHAVIOUR	
X	Rest	Lying down on side
X	Rest	Lying down on back
X	Rest	Lying down on belly
X	Sit	On hind legs
X	Stand	On all 4 legs
X	Sleep Prep	walk in circles; paw surface

	LOCOMOTIVE BEHAVIOUR	
X	Walk	Default speed
X	Trot	Slightly faster speed (almost like a prance)
X	Run	Faster and energetic speeds
X	Standing Up	Up on rear leg against taller object
	Circle	Repetitive circling at default speed
	Tail Chase	Repetitive circling at faster speeds
	Pace	Repetitive walking, usually along fence/wall
	Social Pace	Repetitive pace with other friend
X	Jump	Repetitive motion; hind legs leave ground
	Wall Bounce	Repetitive rebounding off wall
X	Flank Suck	Repetitive/prolonged grooming of flank
X	Walk	preference to walk against wall
X	Walk	always on door swing opening

	VOCAL BEHAVIOURS	
X	Bark	standard vocalization
X	Bark	when irriated by an object/event
	Howl	long drawn out vocalization
X	Growl	low pitch vocalization
X	Bark at Passers	recorded where objects could be noted
X	Whimpering	soft vocalization for attention
X	Lazy Barking	Barking while lying on side

	SOCIAL BEHAVIOUR - DOG	
	Contact Dog	Lying in contact with dogs
X	Amicable Dog	Lick/Paw dog with tail wagging
	Threat Dog	Snarl against others
	Attack Dog	Bite/Snap/Chase with aggressive intent
X	Defensive Dog	Evade, cower, roll over, lick face
	Competitive Dog	Defend object/food; territorial
X	Sniff Dog	Nose to any area of dog
X	Solicit Play Dog	Bow, short charges with bounce in step
	T-Dog	Muzzel placed around neck of another dog
	Mount Dog	Hetero/homosexual reproductive urges
X	Mounted	Subject dog to being mounted
X	Staring Dog	Watch from afar until noticed

	SOLITARY BEHAVIOUR	
X	Autogroom	Lick, pull at body/pelage
X	Dig	Dig at ground with paws
X	Urinate Squat	In squatting position
	Urinate Raised Leg	With one leg raised up
	Kick Ground	Scratch ground following urination
X	Sniff Ground	Nose on floor continuously
X	Eat	Eating meals/treats
X	Drink	Hydrating with water
	Coprophagy	Eating fecal matter
X	Chew	Chew non-nutritive material
X	Eat Grass	Consume grass blades
X	Mouth Toy	Chew toys continuously

Analysis Number 01

Page Number 1 of 3

Analysis of Spatial "Effect Images"

Object Tone Analysis

SUBJECT INFO

Name/Age: Truffles - 3 yrs

Breed: Pembroke Welsh Corgi

Gender: ☐ male ☒ female

Rescue: ☐ yes ☒ no

ANALYSIS INFO:

Type of Home: Highrise Condo

Perception Image vs Effect Image

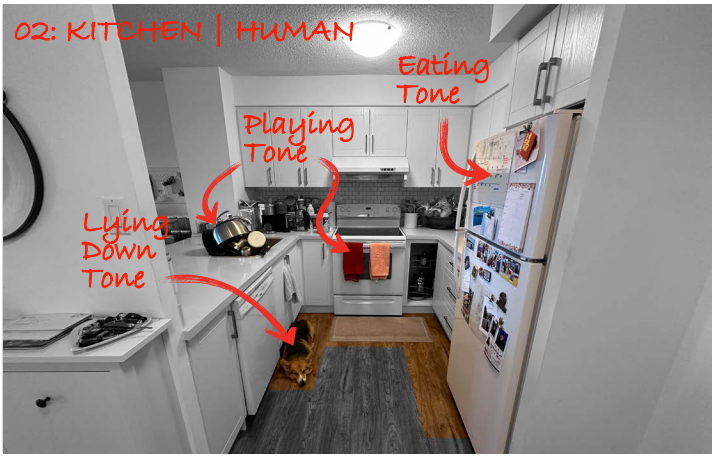
Perception Image *is the image the object portrays to the subject in response to the natural subjects tone. For example, a chair naturally emits a "sitting tone" as it's perception image.*

Effect Image *is the image that modifes the perception image of an object due to the subject's prior use and experience of that object. Therefore, if the subject previously used a chair to "climb" up on to reach the top of the shelf, then that chair now has a "climing tone" in addition to it's "sitting tone" - the "climbing tone" is now the effect image.*

Take photos of your living spaces and look at it through the eyes of your dog. What does your dog see?













Analysis Number 01

Page Number 2 of 3

Analysis of Spatial "Effect Images"

Object Tone Analysis

SUBJECT INFO

Name/Age: Truffles - 3 yrs

Breed: Pembroke Welsh Corgi

Gender: ☐ male ☒ female

Rescue: ☐ yes ☒ no

ANALYSIS INFO:

Type of Home: Highrise Condo

Perception Image vs Effect Image

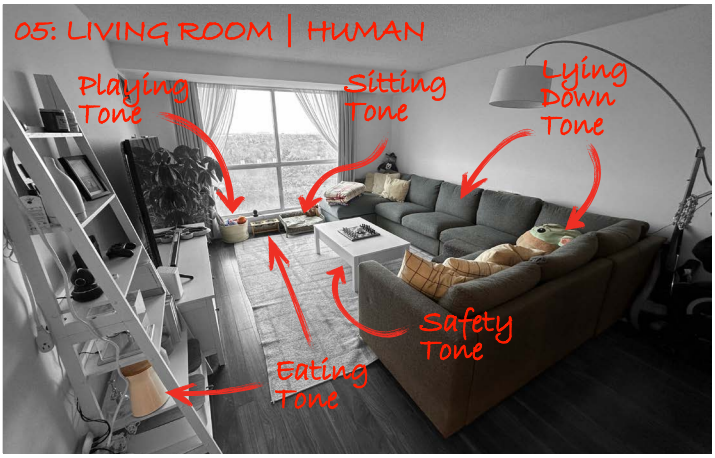
Perception Image *is the image the object portrays to the subject in response to the natural subjects tone. For example, a chair naturally emits a "sitting tone" as it's perception image.*

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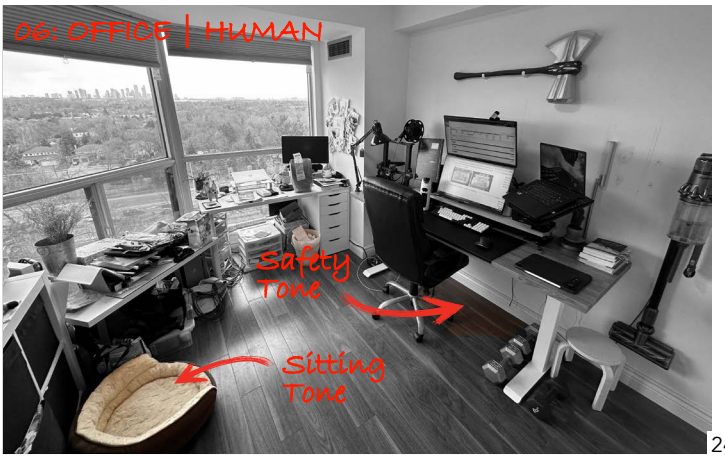
Take photos of your living spaces and look at it through the eyes of your dog. What does your dog see?













Analysis Number 01

Page Number 3 of 3

Analysis of Spatial "Effect Images"

Object Tone Analysis

SUBJECT INFO

Name/Age: Truffles - 3 yrs

Breed: Pembroke Welsh Corgi

Gender: ☐ male ☒ female

Rescue: ☐ yes ☒ no

ANALYSIS INFO:

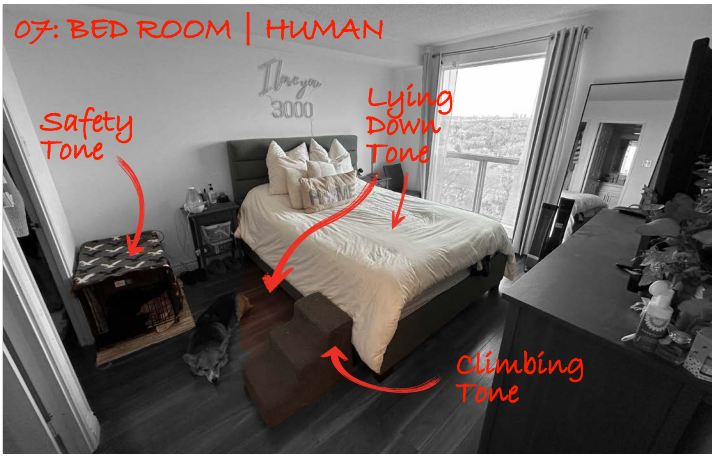
Type of Home: Highrise Condo

Perception Image vs Effect Image

Perception Image *is the image the object portrays to the subject in response to the natural subjects tone. For example, a chair naturally emits a "sitting tone" as it's perception image.*

Effect Image *is the image that modifes the perception image of an object due to the subject's prior use and experience of that object. Therefore, if the subject previously used a chair to "climb" up on to reach the top of the shelf, then that chair now has a "climing tone" in addition to it's "sitting tone" - the "climbing tone" is now the effect image.*

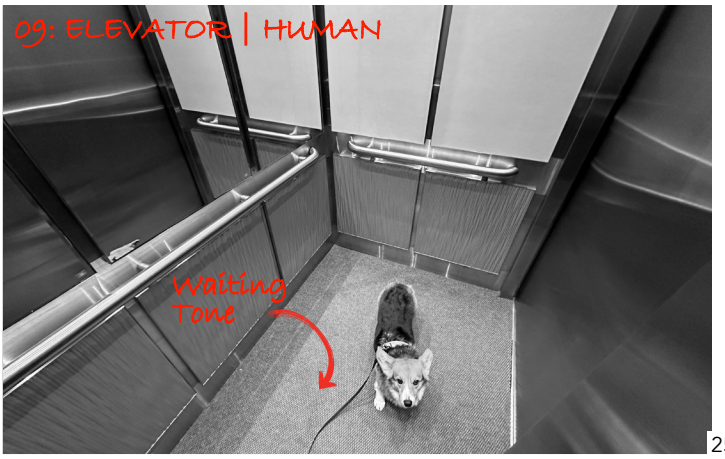
Take photos of your living spaces and look at it through the eyes of your dog. What does your dog see?











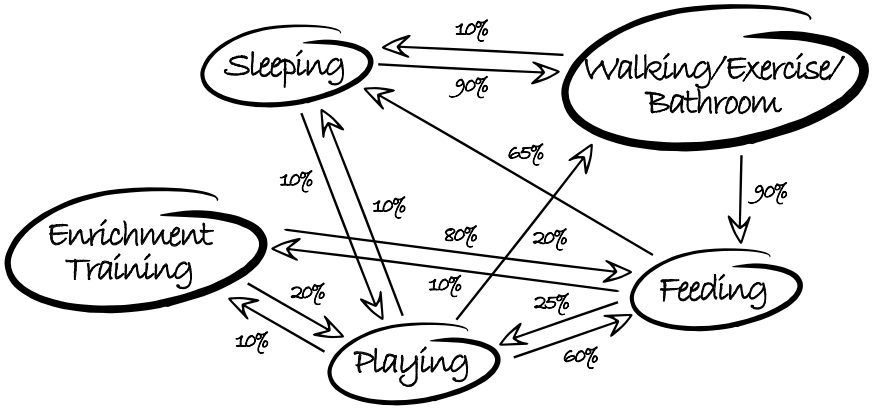


Analysis Number 01

Analysis at Home

Behaviour Observation

Create a flow chart below based off your observations in the chart to map out behavioural patterns. Feel free to add percentages to indicate the frequency of the behaviours.



SUBJECT INFO

Name: Truffles

Breed: Pembroke Welsh Corgi

Age: 3 years old

Gender: ☐ male ☒ female

Rescue: ☐ yes ☒ no

ANALYSIS INFO:

Type of Home: Highrise Condo

Date: March 01, 2024

Weather: Clear Skies, 4°C to 9°C

Work Day: ☒ yes ☐ no

Watch your dog through out the day and see what they do. Where are they doing it? When are they doing it? Eventually, patterns will arise and you will begin to understand your pup better.

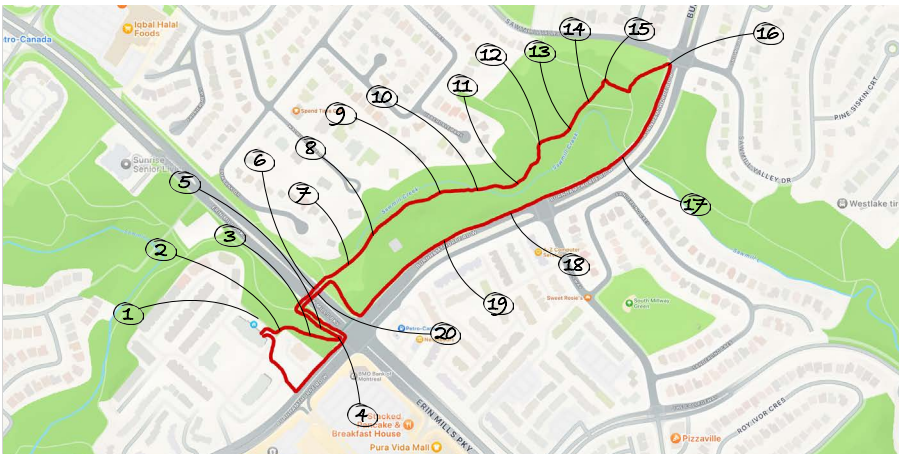
TIME	ACTION	FUNCTIONAL CATEGORY	ROOM	LOCATION
7:00 am	Wake up	Resting	Bedroom	On top of the bed
7:30 am	Leave for a walk	-	Hall and Elevator	Level 11
7:32 am	Play with Custodian	Play	Foyer	Level 1
7:33 am	Walk	Bodily Function	-	Outside
8:02 am	Come back from a walk	Exercise	-	Outside
8:07 am	Eat breakfast	Foraging	Living Room	in front of window
8:15 am	Sleep	Resting	Kitchen	corner beside fridge
10:12 am	Barking at door	Communicative	Entrance	in front of door
10:15 am	Sleep	Resting	Living Room	on the couch
1:24 pm	Sleep	Resting	Dining Room	under dining table
4:00 pm	Wake and go to office	Communicative	Office	front office door
4:30 pm	Go for a walk	-	Hall and Elevator	Level 11
5:30 pm	Come back from a walk	Exercise	-	Outside
5:45 pm	Play with toys	Play	Living Room	on floor
6:00 pm	Enrichment Training	Play	Living Room	on floor
6:15 pm	Play fetch with dad	Play	Living Room, Hall	across entire unit
6:30 pm	Eat Dinner	Foraging	Living Room	in front of window
7:00 pm	Play with toys	Play	Living Room	on floor/couch
8:00 pm	Sleep	Resting	Kitchen	corner beside oven
9:00 pm	Last Pee of the day	Bodily Function	-	outside right @ exit door
9:05 pm	Come back inside	-	-	-
9:30 pm	Sleep	Resting	Bedroom	on top of the bed

Analysis Number 01

Behaviour Analysis on walks

Sensory Observation

Mark up a map of the path taken during a walk.



SUBJECT INFO

Name: Truffles

Breed: Pembroke Welsh Corgi

Age: 3 years old

Gender: ☐ male ☒ female

Rescue: ☐ yes ☒ no

ANALYSIS INFO:

Context: Long Morning walk

Date: March 1, 2024

Weather: Clear Skies, 4°C to 9°C

Time Start-End: 12:00pm - 1:00pm

Time Duration: 1 hour

Keep note of anything out of the ordinary. What catches your dog's attention? Why is your dog stopping? Whenever your dog breaks from their default action of "walking", take note of what time that is and what they're doing. Then allocate a number (#) to that action to cross reference it on your map so you know where it occured on your path.

#	TIME *(take note in chronological order)*	ACTION	EXTERNAL INFLUENCE NOTES	SENSES *(check all that apply)*				
				Smell	Sight	Sound	Touch	Taste
1	12:04 pm	Stop and sniff	Passing by garbage disposal	X				X
2	12:05 pm	Stop, sniff and play	Passing by dog friend	X	X		X	
3	12:07 pm	Pee and Poop	moved to side on leaves in ravine				X	
4	12:09 pm	Stop and stare	Truck passing thru intersection		X	X		
5	12:10 pm	Urine Mark	Smelled branch on path side	X				
6	12:11 pm	Sprint/Run	Path under bridge		X		X	
7	12:12 pm	Stop and sniff	Newly planted trees in open field	X	X		X	
8	12:15 pm	Stop and sniff	Side opening on path to water	X	X	X		
9	12:20 pm	Urine Mark	Tree trunk	X				
10	12:22 pm	Stop and Stare	Squirrel running in distance		X			
11	12:24 pm	Run and chase	Squirrel ran past on path	X	X	X		
12	12:30 pm	Stop, sniff and play	Passing by dog friend on the path	X	X		X	
13	12:31 pm	Urine Mark	Following dog friend up ahead	X	X			
14	12:32 pm	Urine Mark	Following dog friend up ahead	X	X			
15	12:33 pm	Stop and stare	Dog friend walk on other path		X			
16	12:36 pm	Stop and stare	Truck passing by		X	X		
17	12:40 pm	Urine Mark	smelled a rock on the side	X				
18	12:43 pm	Run and chase	Squirrel running in distance		X	X		
19	12:45 pm	Urine Mark	Center of ashpalt sidewalk	X			X	
20	12:50 pm	Stop and bark	Other dog walking by		X	X		

Analysis Number 02

Behaviour Analysis on walks

Sensory Observation

Mark up a map of the path taken during a walk.



SUBJECT INFO

Name: Truffles

Breed: Pembroke Welsh Corgi

Age: 3 years old

Gender: ☐ male ☒ female

Rescue: ☐ yes ☒ no

ANALYSIS INFO:

Context: Short Afternoon Walk

Date: March 1, 2024

Weather: Clear Skies, 4°C to 9°C

Time Start-End: 4:00pm - 5:00pm

Time Duration: 1 hour

Keep note of anything out of the ordinary. What catches your dog's attention? Why is your dog stopping? Whenever your dog breaks from their default action of "walking", take note of what time that is and what they're doing. Then allocate a number (#) to that action to cross reference it on your map so you know where it occured on your path.

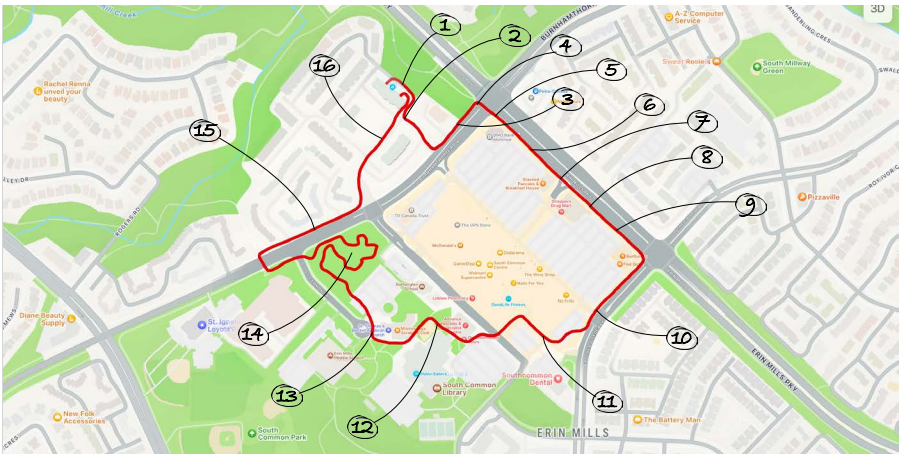
#	TIME *(take note in chronological order)*	ACTION	EXTERNAL INFLUENCE NOTES	SENSES *(check all that apply)*				
				Smell	Sight	Sound	Touch	Taste
1	4:05 pm	Stop and sniff	Passing by garbage disposal	X				X
2	4:08 pm	Pee and Poo	on grass patch at corner	X			X	
3	4:15 pm	Stop, Sit and Stare	Dog friend walking across the lot		X			
4	4:21 pm	Stop and sniff	shrubs on the side	X	X		X	
5	4:25 pm	Look around concerned	car backfire at main intersection			X		
6	4:28 pm	Stop and stare	Pinecone on the ground	X	X		X	X
7	4:32 pm	Stop and sniff	shrubs on the side	X	X		X	
8	4:34 pm	Urine Mark	patch of grass on the side	X			X	
9	4:38 pm	Stop and stare	Pinecone on the ground	X	X		X	X
10	4:45 pm	Stop and stare	Pinecone on the ground	X	X		X	X
11	4:46 pm	Urine Mark	patch of grass on the side	X			X	
12	4:47 pm	stop, run and chase	bird in bush	X	X	X		
13	4:50 pm	Stop and sniff	shrub on the side	X				

Analysis Number 03

Behaviour Analysis on walks

Sensory Observation

Mark up a map of the path taken during a walk.



SUBJECT INFO

Name: Truffles

Breed: Pembroke Welsh Corgi

Age: 3 years old

Gender: ☐ male ☒ female

Rescue: ☐ yes ☒ no

ANALYSIS INFO:

Context: Long Afternoon Walk

Date: March 8, 2024

Weather: Clear Skies, 1°C to 5°C

Time Start-End: 4:00pm - 5:00pm

Time Duration: 1 hour

Keep note of anything out of the ordinary. What catches your dog's attention? Why is your dog stopping? Whenever your dog breaks from their default action of "walking", take note of what time that is and what they're doing. Then allocate a number (#) to that action to cross reference it on your map so you know where it occured on your path.

#	TIME *(take note in chronological order)*	ACTION	EXTERNAL INFLUENCE NOTES	SENSES *(check all that apply)*				
				Smell	Sight	Sound	Touch	Taste
1	4:05 pm	Stop and sniff	Passing by garbage disposal	X				X
2	4:09 pm	Pee	on grass patch at corner	X			X	
3	4:12 pm	Poo	on the side on leaves	X			X	
4	4:15 pm	Sit and wait	Red light at intersection		X	X		
5	4:17 pm	Urine Mark	patch of grass on side	X			X	
6	4:25 pm	Stop and sniff	large lot sign on concrete posts	X	X			
7	4:28 pm	Stop and sniff	bush on the side	X	X			
8	4:33 pm	Stop and stare	pinecone on the floor	X	X		X	X
9	4:35 pm	start running	on asphalt paving				X	
10	4:38 pm	Urine Mark	patch of grass on side	X			X	
11	4:40 pm	Stop and roll	pile of snow from snowplow		X		X	X
12	4:45 pm	start running	large patch of grass	X	X		X	
13	4:46 pm	Stop and sniff	pinecone on the floor	X	X		X	X
14	4:48 pm	start running	large open field of grass	X	X		X	X
15	4:55 pm	Urine Mark	patch of grass on side	X			X	
16	4:58 pm	Stop and sniff	pinecone on the floor	X	X		X	X

Analysis Number 01

Mulch Surface Area

Social Interaction Analysis

Behaviour Measurement

Tally up how many times your dog initiates or receives an interaction with others and once you get a total on each end, you will learn if they are leaders or followers; extroverts or introverts; players or loners.

INITIATOR		RECEIVER	
My Dog - Other Dog	My Dog - Human	Other Dog - My Dog	Human - My Dog
𝍸 𝍸 𝍸 I	𝍸 𝍸 𝍸 II	𝍸 I	𝍸

Total Receiver = 33

Total Initiator = 10

SUBJECT INFO

Name/Age: Truffles - 3 yrs

Breed: Pembroke Welsh Corgi

Gender: ☐ male ☒ female

Rescue: ☐ yes ☒ no

ANALYSIS INFO:

Context: Dog Park - Mississauga

Location: Quenippenon Park

Date: March 4, 2024

Weather: Sunny, 11°C-15°C

Time Start-End: 4:45pm-5:45pm

Time Duration[1]: 60 min

Keeping track of measureable data can help better understand behavioural habits. Once you complete multiple analyses, you will begin to isolate behavioural patterns and can start asking the question of "why" something is occuring. The following matrix has preset basic actions your dog will preform, but feel free to add more in the blank spaces if your dog is doing something not already listed.

ACTION	FUNCTIONAL CATEGORY	FREQUENCY[2] *(tally up)*	RATE *(frequency[2]/time[1])*	INTENSITY *(how difficult is it to stop the action?) 5 = most*				
				1	2	3	4	5
Barking	Communicative Behaviour							
Eat Grass	Foraging Behaviour							
Growling	Communicative Behaviour							
Humping	Reproductive Behaviour							
Meeting other Dog	Play Behaviour	𝍸	0.083					X
Pee	Bodily Function	I	0.017			X		
Poo	Bodily Function	I	0.017		X			
Run	Play Behaviour	III	0.05				X	
Stop and Lie Down	Resting Behaviour	II	0.033			X		
Stop and Roll	Play Behaviour							
Stop and Sniff	Foraging Behaviour	𝍸	0.083				X	
Urine Marking	Communicative Behaviour	IIII	0.067		X			
Zoomies (FRAP)	Play Behaviour							
Play fetch with ball	Play Behaviour	𝍸 𝍸 III	0.217					X
Sniff other dogs butts	Communicative	III	0.05			X		
Come back to owner	Scared	IIII	0.067				X	
Run/play with dogs	Play Behaviour	I	0.017					X
Jump on park table	Play Behaviour	I	0.017			X		
Hang out beside fence	Foraging	III	0.05			X		
Walk alone	Foraging	IIII	0.067	X				
Distracted by bird	Hunting	I	0.017				X	

2.3 | INTERVIEW & SURVEY ANALYSIS

In 2013, Toronto recognized that the city's health was heavily impacted by all the condominium communities quickly emerging and launched a 2 phase public consultation process to engage the people on a wide variety of issues. The key objective was to seek feedback that will support the city in developing policy recommendations to improve life for condominium residents. Phase 1 had over 1500 participants provide general feedback who express that there is an overarching need to coordinate city planning with all types of infrastructure to ensure neighbourhood planning was done cohesively to accommodate the fast densification.

ISSUES	NUMBER OF COMMENTS
People don't pick up after dogs	57
Make transportation available for dog owners during rush hour	1
Dog off leash in areas they're not permitted	42
Too many dogs	14
Urine Smell too strong	6
Noise on balcony from barking dog	5
Dog attack	2
Width of path too narrow for dogs	2
Under utilized dog park (i.e. Ellerslie Park)	1
Lack of dog park in proximity	22
More dog parks that aren't rock	1
Dog pee killing grass/plants	10
Lack of dog etiquette signage	5
Unsafe walking conditions at night	1
Hearing dogs bark through wall	8
Afraid of dogs	3
Poor quality of life due to ban on dogs	1
Dogs too big in building	2
Lack of Pet relief areas in buildings	7
Lack of dog facilities in building	6
Damage to building by dog	1

FIG 2.4 *[LEFT]*

A summary of all the participant responses in the Toronto Condominium Public Consultation Survey, outlining which issues were most common amongst the people.

Phase 2 dove into deeper realms to provide feedback on draft ideas for improving condominium living, where one of the sections in the report revolved around dogs and the issues that arose due to the lack of amenities for them. With over 500 participants in this phase, 49.1% claimed to be a dog owner. Only 36.2% of that group believed there were enough dedicated places for dogs to be off leash and 46.7% believed that there weren't enough facilities for dogs in the city. Participants also had the opportunity to express their personal opinions on the matter and the following figure summarizes common issues that were brought up and the number of times each was repeated. All in all, it was concluded that the absence of dedicate dog amenities puts a strain on existing public and green spaces.

Upon thorough examination of the feedback provided by participants, it became evident that tension persisted within the community between dog owners and non-dog owners when comments such as the following arose: "Is the entire city run by dog owners? Start enforcing rules for dogs to be on a leash, owners to clean up after dogs" or "Dog free buildings should be legal… the rights of non dog owners should have some balance with rights of dog owners". While there are some politics involved with managing these discrepancies, there seems to be some merit behind the legality for dog-free buildings. As a potential solution, this implies dog-free buildings to be supplemented with dog-dedicated buildings throughout the city, equipped with comprehensive pet facilities to ensure effective management of canine activities. Moreover, increasing the availability of pet relief spaces in city landscapes could mitigate concerns regarding pet waste disposal and sanitation, similar to how addressing drug use issues through the implementation of safe and controlled environments led to overall improvements. The next chapter of this thesis delves into a plethora of alternative solutions articulated through a proposed canine-inclusive design guide, aimed at establishing best practice standards. Ideally, these measures will cultivate a more harmonious coexistence between dog owners and non-dog owners.



CHAPTER 3.0

CANINE INCLUSIVE DESIGN GUIDELINE



3.1 | CANINE CENTRIC DESIGN PRINCIPLES

To achieve the final objective of crafting a comprehensive Canine Inclusive Design Guideline that can be referenced for all future high-rise residential developments in North America, it is imperative to establish canine-centric design principles. The canine behaviour and physiological analysis completed in chapter 2.1 was the first step. In addition to that research, understanding the basic necessities of a dog as well as their typical daily schedule is also just as important. The following chart below displays a list of essential requisites for facilitating a harmonious coexistence in our world between human and dog, drawing from my personal experience with Truffles (as exemplified in chapter 2.2) and informed by the research of PHD Dr. Debra Primovic (Primovic 2022).

The reality of the canine schedule is that it revolves around ours – people. If the owner is too busy with work, then chances are high that their dog won't be having their afternoon walk. Understanding the typical daily schedule of a dog not only begins to better understand the world they live in, but also begins to isolate when and where hotspots will take place throughout the building, which in turn will help inform design decisions

NECESSITY	DESCRIPTION
Play	This is a crucial necessity during the day to engage in social interactions with other dogs, mental enrichment for personal mental health, and exercise for physical health.
Sleep	The breed, age and size of a dog will dictate how much they sleep, but generally dogs sleep between 16 to 18 hours a day. How much they sleep depends on the activities they part take in.
Water	Dogs need access to fresh water at all points in the day. Their thirst is driven by the activities they part take in.
Food	The breed, age and size of a dog will dictate how much and how often they eat. On average, dogs like to eat once or twice a day.
Bathroom breaks	Opportunity to urinate and defecate at least once every 6-8 hours for the average dog. Time interval increases if the dog is in it's young puppy years
General Comfort	Dogs appreciate when their environments are clean and temperatures are conditioned. Access to fresh air is necessary too.
Love	Quality time spent with owners

FIG 3.1 *[LEFT]*

The chart displays a list of requirements for a dog to coexist in society based off my personal experience with Truffles and the support of PHD Dr. Debra Primovic's article on PetPlace.

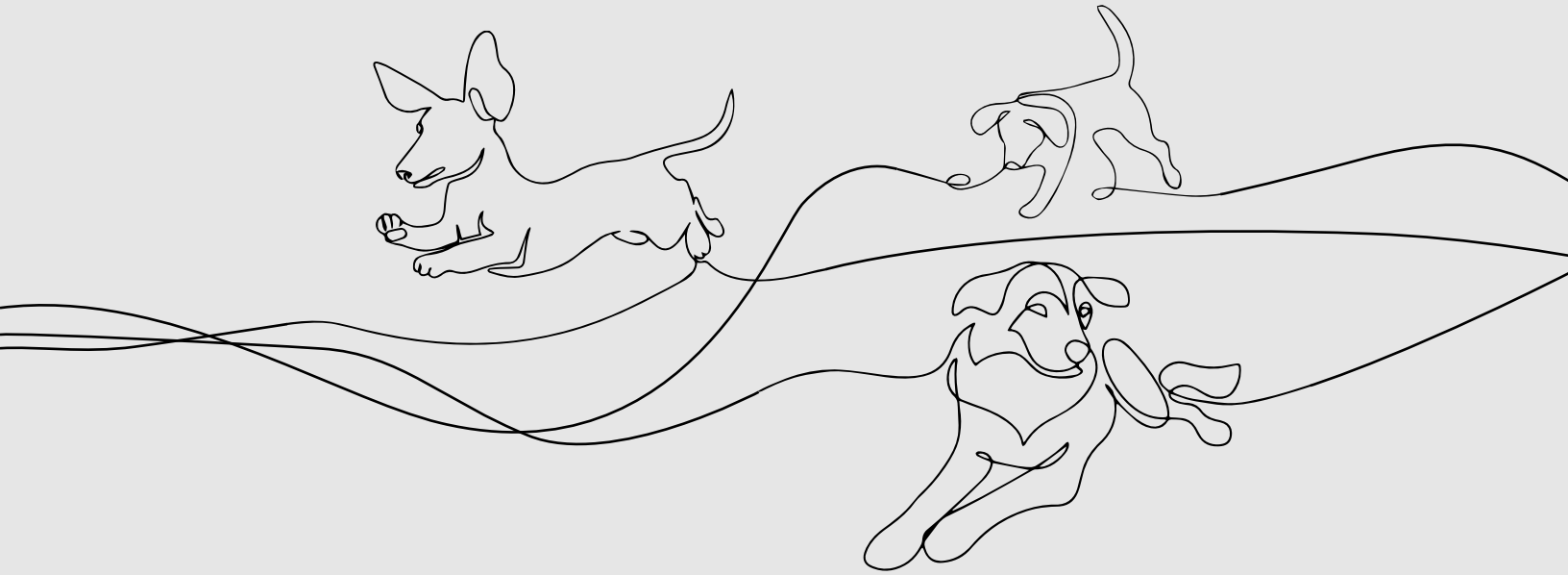
regarding programmatic proximities. Mornings are a hectic time for dog owners, requiring quick access to essential spaces like washrooms and walking areas within a condominium development. The workday introduces diverse activities for dogs, as some owners stay home while others head to work, leading to varied care solutions such as doggie daycare or professional walkers. This necessitates program considerations beyond the condominium setting. Evenings offer a reprieve, allowing owners and dogs to focus on play and relaxation without time or location constraints. This can include long walks, park runs, fetch games, or water activities. The following chart summarizes what an ideal typical day is for a dog, which was also inspired by my personal experience with Truffles (as exemplified in chapter 2.2) and informed by PHD Dr. Debra Primovic's research (Primovic 2022).

FIG 3.2 *[RIGHT]*

The chart displays a summary of what an ideal typical daily schedule is for your dog, inspired by my personal experience with Truffles and PHD Dr. Debra Primovic's article on PetPlace. The locations on the right indicate where the dog will interact at that specific period of the day, which will help inform design decisions.

TIME	DESCRIPTION	LOCATION
7:00am to 7:30am	- Wake up, go for a morning walk for fresh air and washroom opportunity	Home Landscape
7:30am to 8:00am	- Breakfast eating time with fresh water placed out for the day - 10 min for interactive playtime - 10 min for quality time	Home Landscape
8:00am to 9:00am	- Another washroom opportunity post morning meal	Landscape
9:00am to 3:00pm	- Nap time if left alone while owners go to work - Or follow owner around the home	Home Dog Daycare Landscape Sidewalk Park
3:00pm to 5:00pm	- Nap time if left alone while owners go to work - If owner home, go for an afternoon walk for fresh air and washroom opportunity	Home Landscape Sidewalk Park
5:00pm to 6:00pm	- Dinner eating time with fresh water refilled in bowl	Home Landscape
6:00pm to 10:00pm	- Interactive playtime - If owner was out at work all day, then this is the time to bring dog to park - Quality time on couch with TV entertainment - Opportunity for grooming and teeth brushing for dog	Home Landscape Sidewalk Park
10:00pm to 10:30pm	- Evening and last washroom opportunity before bed time	Home landscape

This chapter will explore the design guide document and will be informed by the following design ethos.



Design Ethos

1. **Allowing natural engagement, enrichment, and mental stimulation.**

   - Acknowledging and accomodating their Umwelt

2. **Accomodating dualistic nature and realms of dogs.**

   - "Animal + Companion = Liminal Creatures"
   - Spatial consideration addressing unpredictability of creatures
   - Redundancies built in place

3. **Segregated, yet integrated services for humans and dogs.**

   - Spatial constraints while promoting inclusive community
   - Accomodating to dogs, not at the expense of human needs
   - Fostering community engagement for both species involved

4. **Consideration of the time based activities.**

   - Varying times drive hotspots for activities

3.2 | THE BUILDING SCALE

This document is intended to guide future developments in a direction that is supportive of a growing pet population by providing for canine needs in a high-density residential community. It offers high quality, pet friendly, design interventions for new developments and can also inform renovation projects to existing multi-unit buildings. While catering heavily to the canine umwelt, each innovative design standard provides support to the building residents, the dog owners, the non-dog owners, and the surrounding community. The goal is to bring awareness to the importance of dogs in our community and their umwelt, in order to improve the everyday quality of life for our canine companions.

All proposed design interventions address the canine umwelt through the physical realm of public and private spaces. Accordingly, the following guideline and best practices are presented at 3 scales: (A) the building scale at grade, (B) the building scale above grade, and (C) the unit scale. The building scale at grade section (A) explores the relationship between the building itself and the surround context to inform provisions of canine amenities on site. The building scale above grade section (B) provides guidance on design details that elevate the canine wellbeing of the direct residents. And lastly, the unit scale section (C) provides guidance for the design, layout and details of individual units to accommodate accessible pet amenities at a personal level. Each section of the guide offers a wide variety of innovative standards that will address the following design considerations: comfortability, health, texture and materials, durability and maintenance, and acoustics.

SECTION A :
AT GRADE

SECTION B:
ABOVE GRADE

SECTION C:
UNIT SCALE

SECTION D:
ASSEMBLY SCHEDULES

SECTION E:
OVERALL SUPPORT INFO

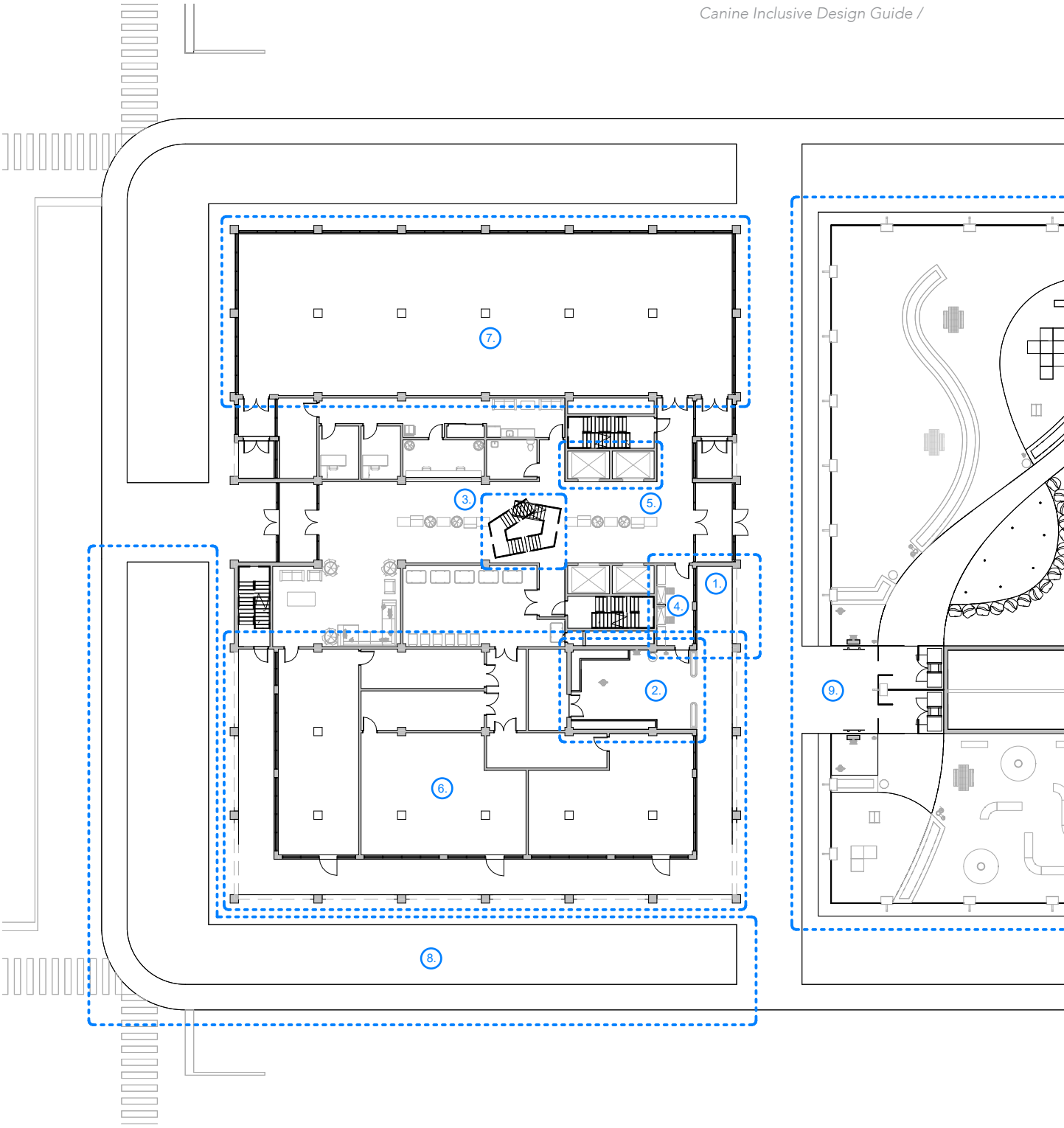


FIG 3.3 *[ABOVE]*

Typical ground floor plan layout with the Canine Centric design principles.

1. CANINE DESIGNATED ENTRANCE
2. PET RELIEF AREA
3. CANINE ACCESSIBLE STAIRCASE
4. CLEANING SPA AREA
5. CANINE ACCESSIBLE ELEVATORS
6. COMMERCIAL SUPPORT SPACES
7. CANINE AMENITIES
8. INTENTIONAL LANDSCAPING
9. OFF LEASH AREA (OLA) DOG PARK

A.3.2.1 | CANINE PATH OF TRAVEL
A.3.2.1.1 | ENTRANCE

Design Standard:

While dogs are allowed through all entrances and exits, there shall be a designated entrance for dog users.

Specification:

- Entrance Door Width (min)= 38 in (965.2 mm) [1]
- Regardless of door type used (sliding, swing, etc.) an automatic opening/ closing system must be utilized for entry doors on the designated canine path of travel
- Revolving doors are prohibited on designated canine path of travel.
- Signage to be implemented to clearly indicate which entrances are canine designated.

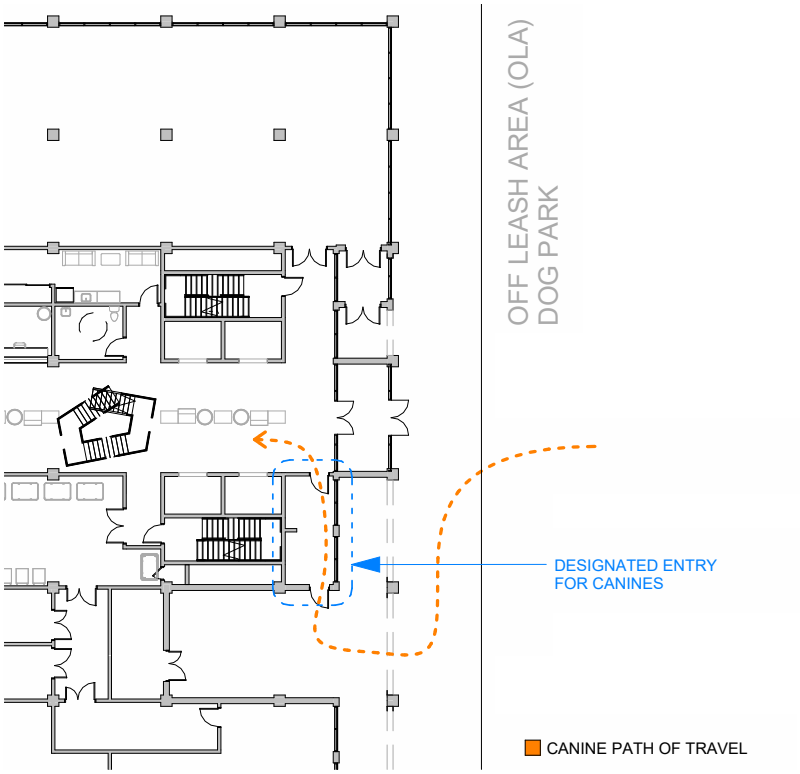
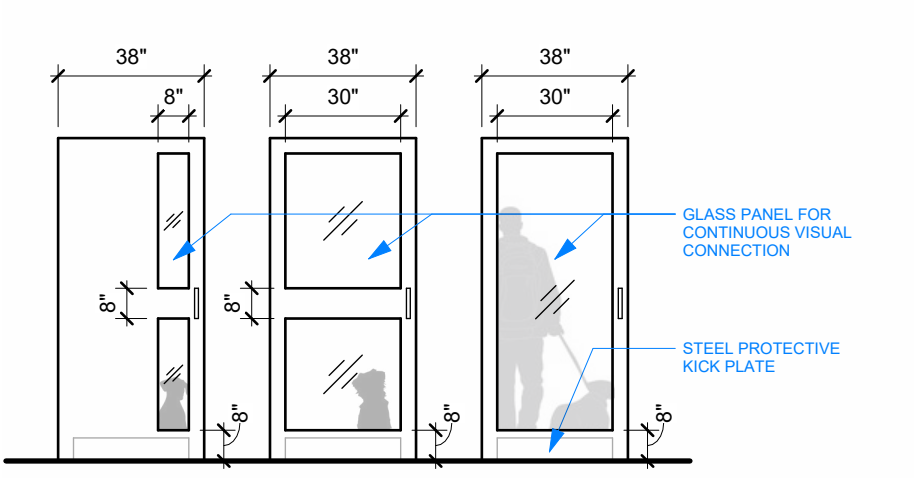


FIG 3.4 *[LEFT]*

Typical ground floor plan layout with the Canine Path of Travel through the canine designated entrance.

FIG 3.5 *[RIGHT]*

3 different examples of acceptable door styles with vision panels to accommodate continuous canine sightlines.



Comfortability:

- Proximity to (POPS) outdoor dog park is recommended. Refer to section A 3.2.5.1 for more information on POP spaces.
- Avoid tall staircases on the designated canine path of travel. [2]

Health:

- Controlled winter maintenance that may be harmful to dogs (i.e. salt). De-icing alternatives include (more info can be found in section E 3.4.4.1):
    - o Dog friendly salt
    - o Sand
    - o Heated Concrete paving
- Use paw friendly ventilation grates around building to avoid getting stuck in and cause injury.

Texture & Materials:

- Canine circulation paths should utilize flooring materials for ease of maintenance such as (more info found in section E 3.4.5.1):
    - o Tiles
    - o Concrete
    - o Vinyl

Durability & Maintenance:

- Proximity to the cleaning station (section A 3.2.2) to mitigate maintenance and cleaning requirements around the building.

1. Inspired by standards from AODA requirements for universal accessible doors
2. Comment by residential dog-owners of condominiums in Liberty Village.



FIG 3.6 *[LEFT]*

Dog looking through door from the inside. The door features a full-height glass panel with a frosted finish. While the glass doesn't provide a completely clear visual connection, it still includes a safety feature: allowing visibility of people or dogs on the other side before opening, thereby preventing unexpected collisions.



FIG 3.7 *[LEFT]*

Photograph of Truffles looking through a window in a door, longing to go outside, as I slowly get my shoes and coat on. This door exemplifies a design with smaller glass panels dispersed throughout, offering visual connections at varying heights suitable for dogs of different sizes.

FIG 3.8 *[RIGHT]*

Photograph of 77 Greenwich in Manhattan with a side entrance for opportunities to dedicate to pets. A simple design consideration to have a designated entry point for canines to contain messes, while not segregating dogs and dog owners to the back of the buliding as an after thought.

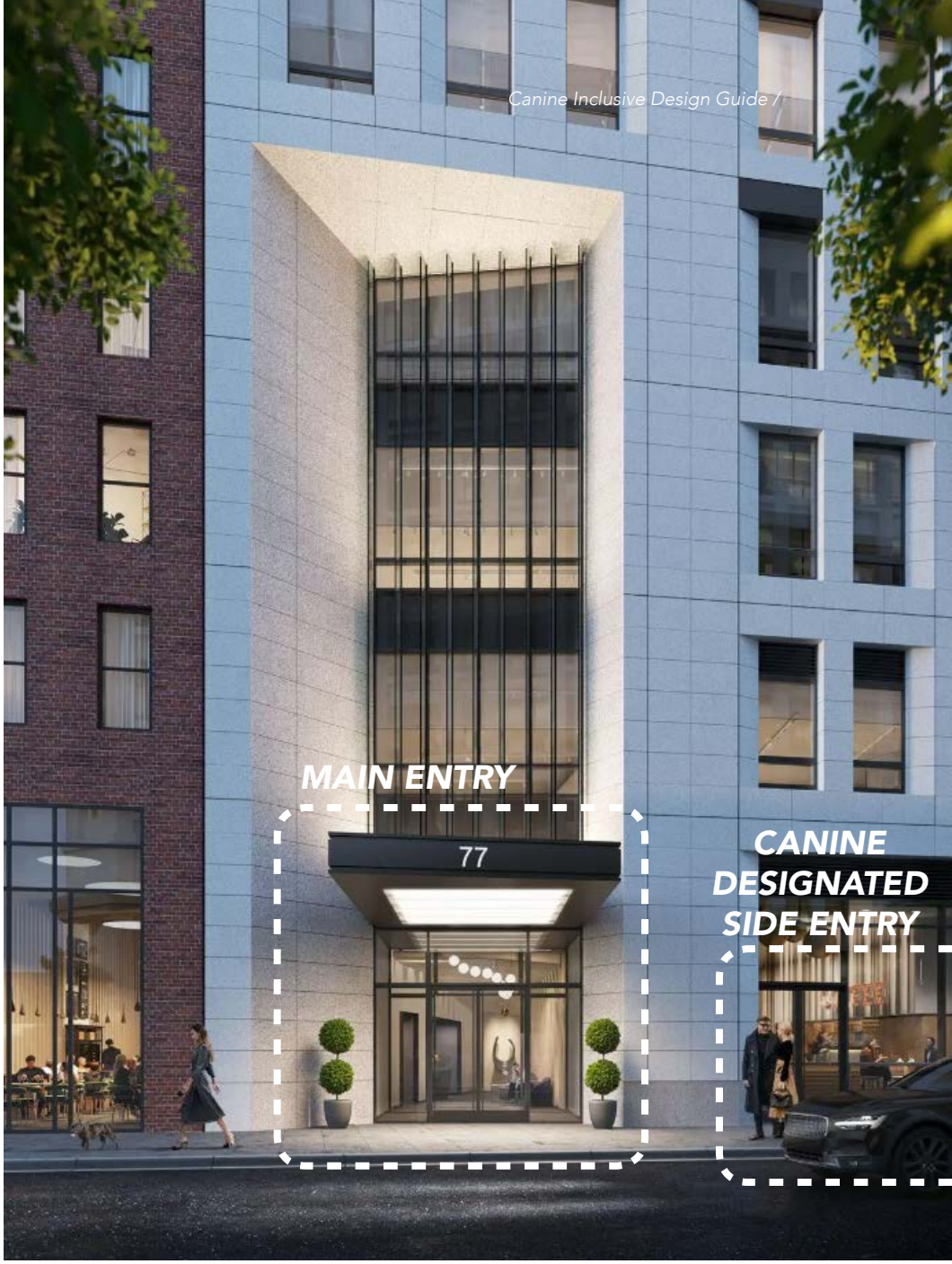
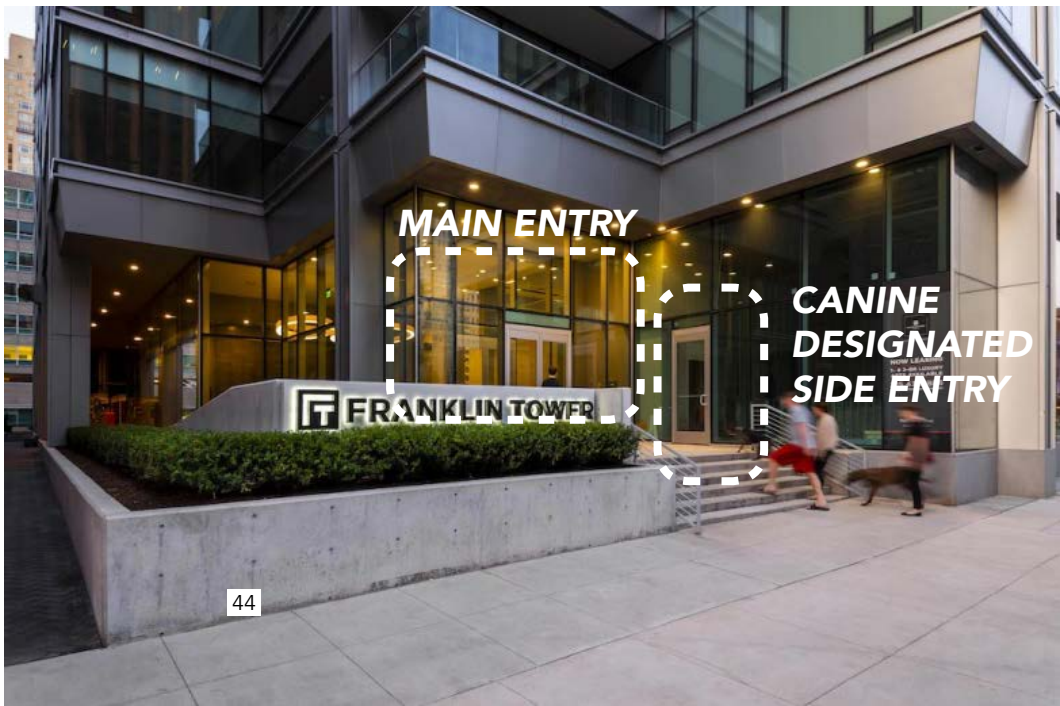


FIG 3.9 *[RIGHT]*

Side entrance at Franklin Tower in Philadelphia that open opportunities for canine designated amenities. Additionally, there is a slight building setback designed to create a gentler transition from the entry door to the sidewalk. This, along with strategic landscaping, provides ample space for canine facilities such as pet relief areas.



A.3.2.1 | CANINE PATH OF TRAVEL
A.3.2.1.2 | ELEVATORS

Design Standard:

There shall be designated canine elevators in the building. A large and easily accessible emergency stop button shall be implemented inside the elevator and outside the elevator in the waiting area in case dogs get caught on leash inside/outside of elevator.

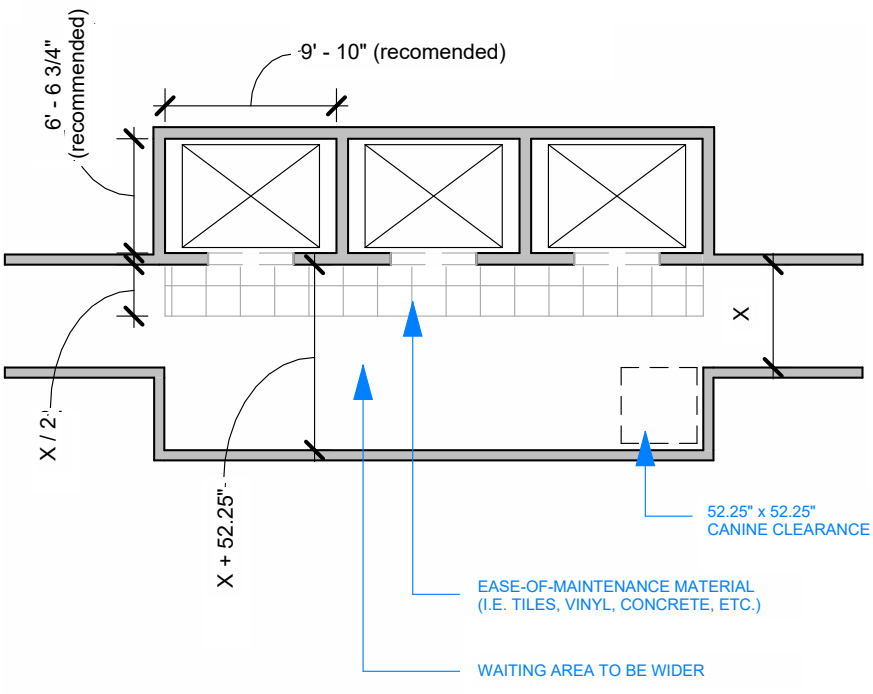


FIG 3.10 *[LEFT]*

Example plan callout of a typical elevator and waiting area.

Specification:

- Required number of canine designated elevators = 50% of the required number of elevators for building (or round up if odd number) according to building codes and local regulations.
- Elevator size (min) = as per building code requirements but recommended to be 64.58 ft^2 (6 m^2) minimum. [3]
- Signage to be implemented to clearly indicate which elevators are canine designated.

Comfortability:

- Elevators to utilize materials for ease of maintenance such as (more info found in section E 3.4.5.1):
    - o Tiles
    - o Concrete
    - o Vinyl

- Removable rolled out carpet is recommended to be implemented during winter seasons. Building management to coordinate cleaning and installation every season. [4]

Durability & Maintenance:

- Having designated elevators will help to contain messes and mitigate maintenance requirements in the building.

3. Inspired by Toronto Pet Friendly Design Guidelines and Best Practices for New Multi- Unit Buildings for 3 large dogs
4. Inspired by my personal experience living in a high rise condominium.



FIG 3.11 *[LEFT]*

Example of durable tile flooring for waiting area outside of elevator.

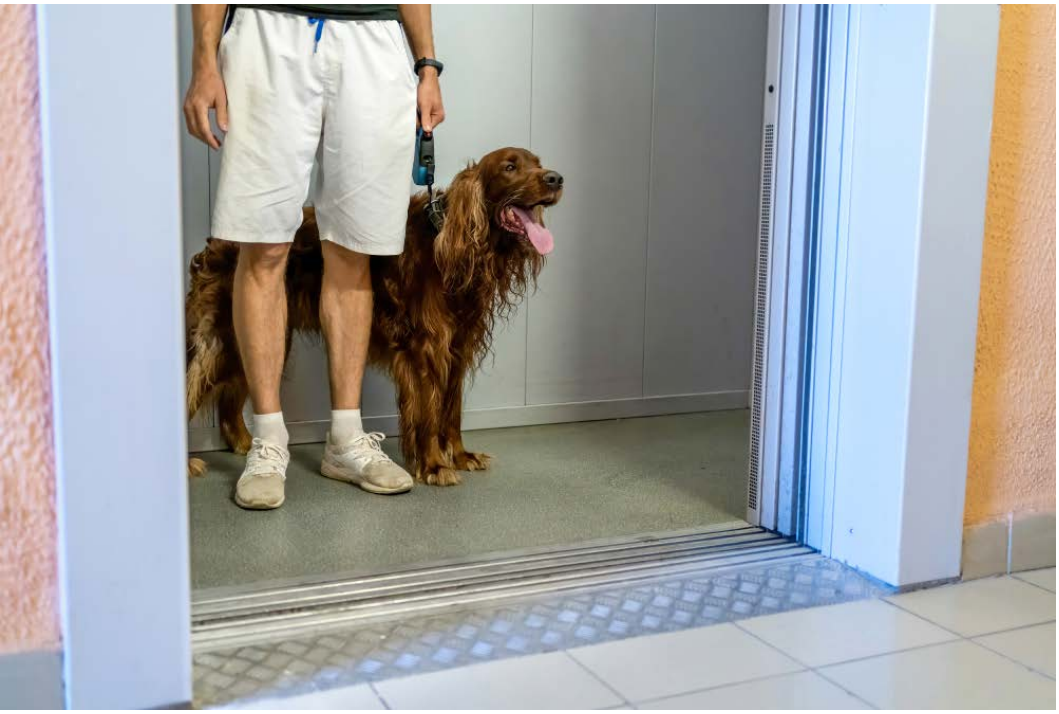


FIG 3.12 *[LEFT]*

Example of dog in elevator with adequate space for more human and canine occupancy.



FIG 3.13 *[LEFT]*

Example of a sticker sign option to clearly communicate a dog friendly elevator.



FIG 3.14 *[RIGHT - LEFT]*

Example of a wall mounted sign option to clearly communicate a dog friendly elevator.



FIG 3.15 *[RIGHT - RIGHT]*

Example of a large sticker sign on elevator door op-tion to clearly communicate a dog friendly elevator.



FIG 3.16 *[RIGHT - RIGHT]*

Carpet rolled out in elevator to combat winter conditions and mitigate maintenance requirements.

A.3.2.1 | CANINE PATH OF TRAVEL

A.3.2.1.3 | EGRESS & CONVENIENCE STAIRS

Design Standard:

Stairs on the canine path of travel as well as all fire egress stairs shall be accessible to all dogs.

Specification:

- Overall stair tread width (min) = as per local municipal building codes + 9 in (228.6 mm) on each side in accordance to the stair details on the next page [5]
- Canine stair riser = 1/2 the riser of the stairs as per local building code [6]
- Canine stair tread depth = 1/2 the tread depth of the stairs as per local building code

Comfortability:

- Canine designated steps shall be easier to climb for smaller dogs
- Circulation shall be offered on each side of the stair case for unobstructed circulation between oncoming pedestrian and canine traffic

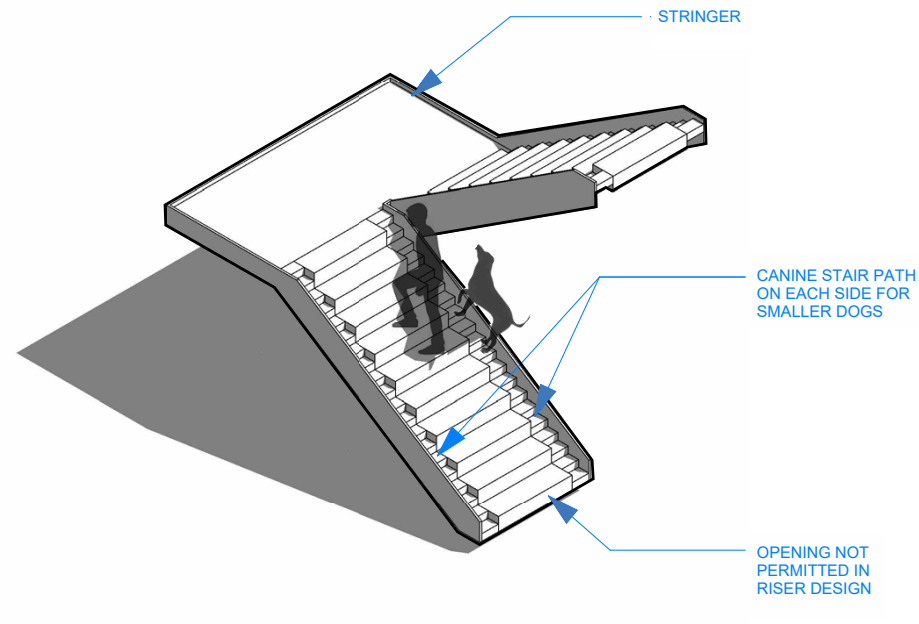
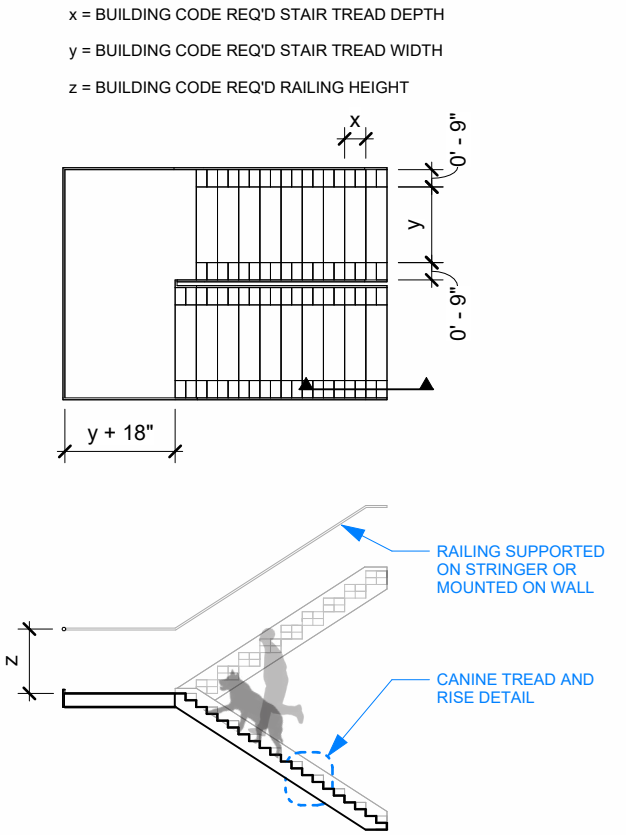


FIG 3.17 *[LEFT]*

Typical staircase axonometric with canine accessible accommodations.

FIG 3.18 *[RIGHT]*

Typical staircase plan and elevation to show canine accessibility in vertical circulation.



Health:

- Smaller dogs, including those with shorter legs (i.e. Corgi breeds), are discouraged from going up and down due to their high risk of hip dysplasia. Reducing the riser height for canine designated stairs offers a more accessible path up and down. [7]

Texture & Materials:

- Stairs shall utilize flooring materials for ease of maintenance such as (more info found in section E 3.4.5.1):
    - o Tiles
    - o Concrete
    - o Vinyl

5. Inspired by the Ontario Building Code
6. 'Joe Chikamori · House Renovation In Ho Chi Minh City'. n.d. Divisare. Accessed 9 April 2024. https://divisare.com/projects/302049-joe-chikamori-house-renovation-in-ho-chi-minh-city.
7. Krontveit, Randi I., Ane Nødtvedt, Bente K. Sævik, Erik Ropstad, and Cathrine Trangerud. 2012. 'Housing- and Exercise-Related Risk Factors Associated with the Development of Hip Dysplasia as Determined by Radiographic Evaluation in a Prospective Cohort of Newfoundlands, Labrador Retrievers, Leonbergers, and Irish Wolfhounds in Norway'. American Journal of Veterinary Research 73 (6): 838–46. https://doi.org/10.2460/ajvr.73.6.838.

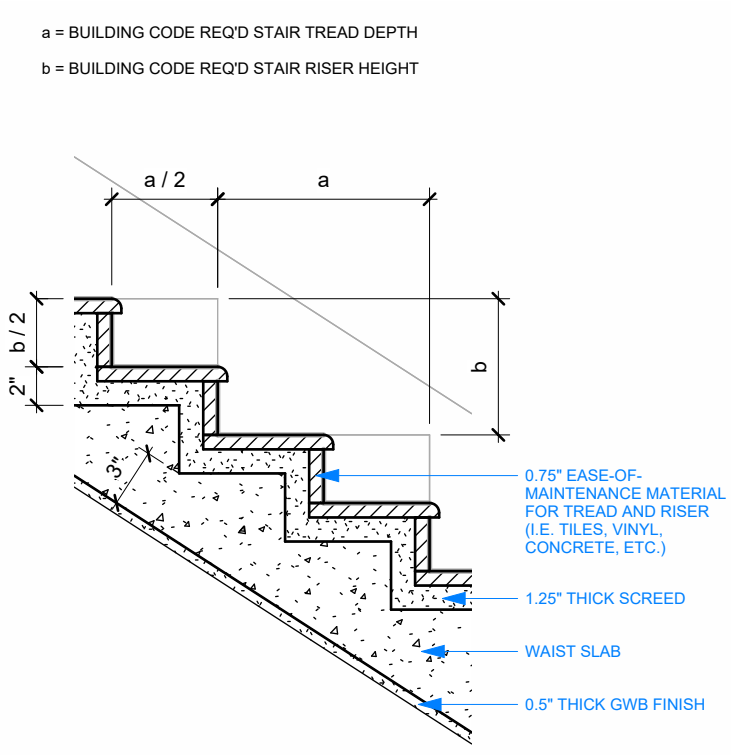


FIG 3.19 *[LEFT]*

Typical section detail cut through canine accessible steps.



FIG 3.20 *[RIGHT]*

Joe Chikamori's staircase for dogs as a part of his simple house design project in Vietnam.



FIG 3.21 *[RIGHT]*

In order to accommodate for dogs, Joe had to explore smaller steps with lower risers. Similar principles were extracted from Joe's designs and implemented in this design guide.

A.3.2.1 | CANINE PATH OF TRAVEL

A.3.2.1.4 | CORRIDOR

Design Standard:

Corridor width shall accommodate in areas where there are expected to be high volumes of canine circulation. It is encouraged to implement enrichment paths as per the following detail.

Specification:

- Corridor Width (min) = As per local building codes + 18 in (457.2 mm) each side in accordance to the detail on the next page. [8]

Comfortability:

- It is recommended to have all doors on designated canine path of travel to swing in the same direction to help encourage consistent dog walking on a single side of the owner and mitigate entangled leashes. [9]
- Visibility mirrors at corners is highly recommended to increase sightlines in blind spots and avoid potential angry encounters between dogs.

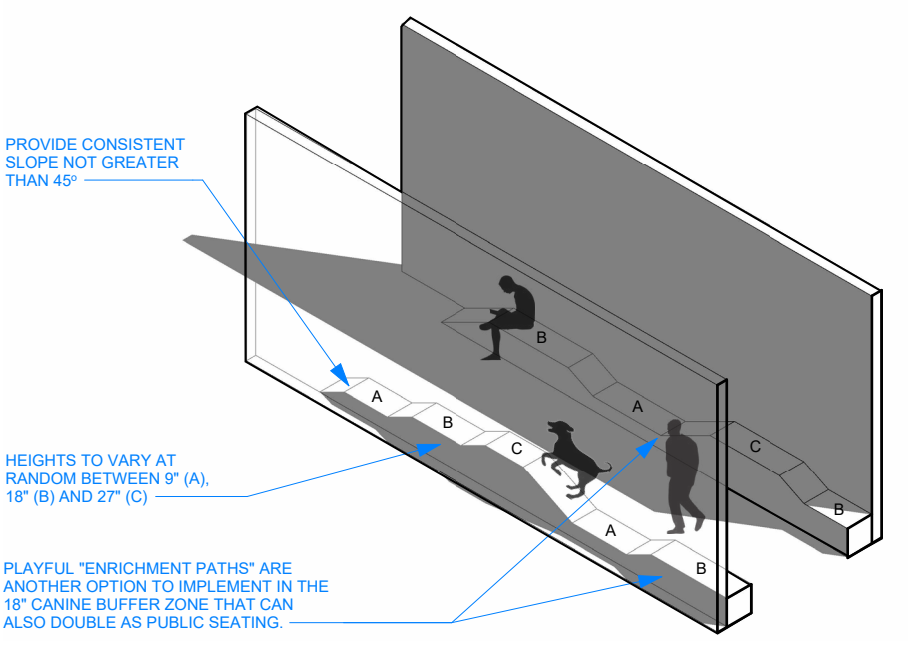
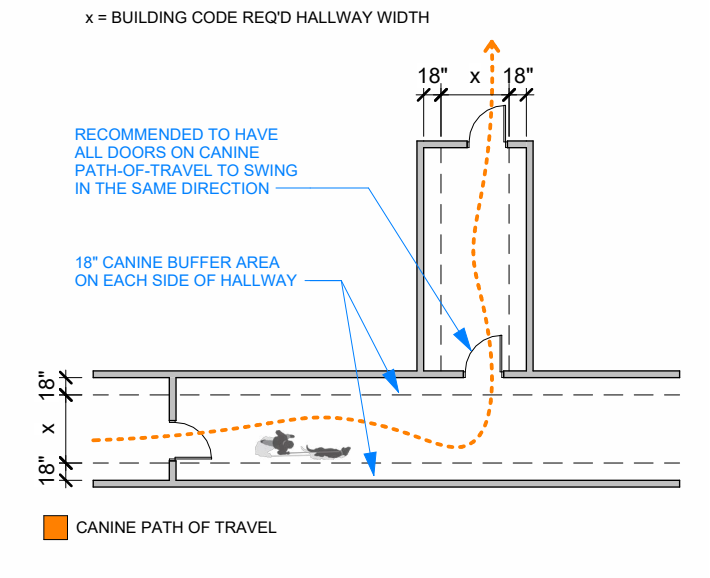


FIG 3.22 *[LEFT]*

Typical hallway axonometric of hallway with multi-level enrichment paths for dogs that can double as public seating.

FIG 3.23 *[RIGHT]*

Floor plan callout of a typical hallway with canine path of travel through and adequate canine clearances.



Health:

- Introducing the multi-level enrichment path as shown in the second detail can allow for physical stimulation when walking dogs. This can also help better the bond between owner and canine with closer eye contact. (10)
- Having plenty of public seating readily available encourages more spaces for longer canine socialization, thereby leading to improved mental health.

Texture & Materials:

- Utilize flooring materials for ease of maintenance such as (more info found in section E 3.4.5.1):
    - o Tiles
    - o Concrete
    - o Vinyl
- Carpet tiles are encouraged for noise reduction and ease of replacement when necessary. Selecting a pattern that will hide any potential stains is ideal.

8. Inspired by the Ontario Building Code accessibility requirements
9. Inspired by my personal experience living in a high rise condominium.
10. Motyer, Amanda Gabrielle. 2014. 'My Other Eyes That See, My Other Ears That Hear'. Master Thesis, University of Waterloo. https://uwspace.uwaterloo.ca/handle/10012/8576.

A.3.2.2 | CLEANING SPA

Design Standard:

Implement cleaning area beside designated canine entrance. Direct entry into the room is recommended.

Specification:

- Quantity of Wash Stations / # of Units = 1 Washing Station / 100 Units [11]
- Minimum washing station height = 30 in (762 mm) [12]

Comfortability:

- Provide adequate air circulation and conditioning in space.
- Washing stations to have ramps to accommodate older and smaller dogs.
- For every washing station, there must be an accessible pet hair dryer.

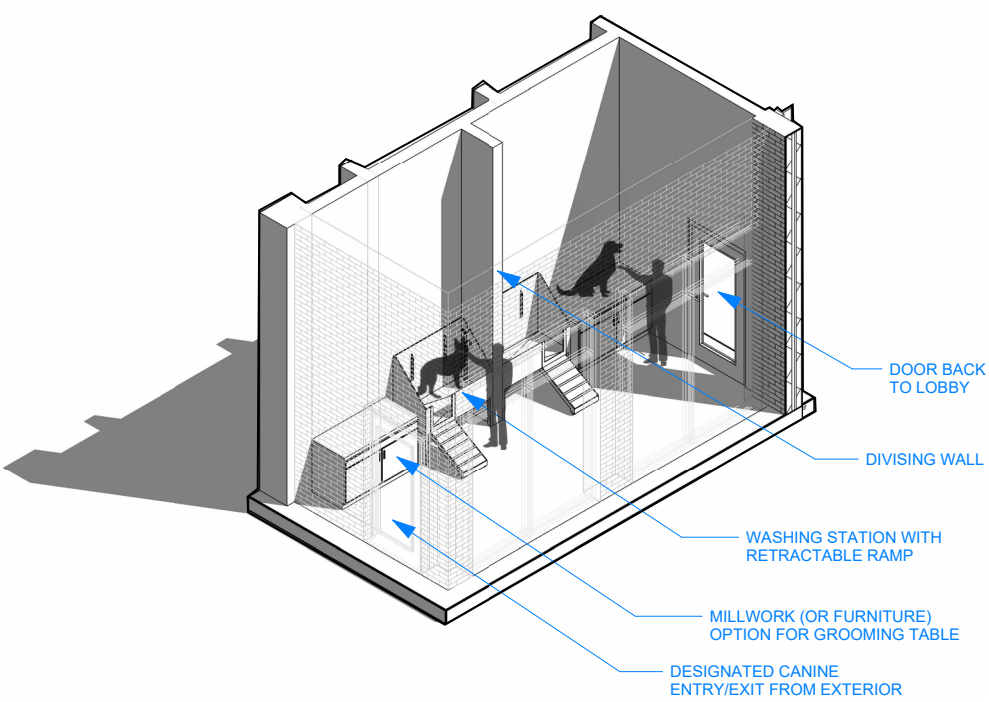


FIG 3.24 *[LEFT]*

Axonometric view of a typical cleaning spa facility.

Health:

- Required Info Sign to be installed at door entrance:

"Protect your dog's scent identity! Don't wash dogs every day. Not only can it be harmful to constantly use chemical cleaners on them, dogs require their natural musk to accumulate for good health." [13]

Texture & Materials:

- The room should include ease-of-maintenance materials for the floors and walls (more info found in section E 3.4.5.1):
    - o Tiles
    - o Concrete
    - o Vinyl

Durability & Maintenance:

- Providing the necessary facilities to clean your dog after a muddy walk before accessing the rest of the building, will help contain seasonal messes.

11. Inspired by Xavier Residential Tower in Chicago Case Study
12. Inspired by Toronto Pet Friendly Design Guidelines and Best Practices for New Multi- Unit Buildings
13. Bekoff, Marc, and Jessica Pierce. 2019. Unleashing Your Dog: A Field Guide to Giving Your Canine Companion the Best Life Possible. Illustrated edition. Novato, California: New World Library.

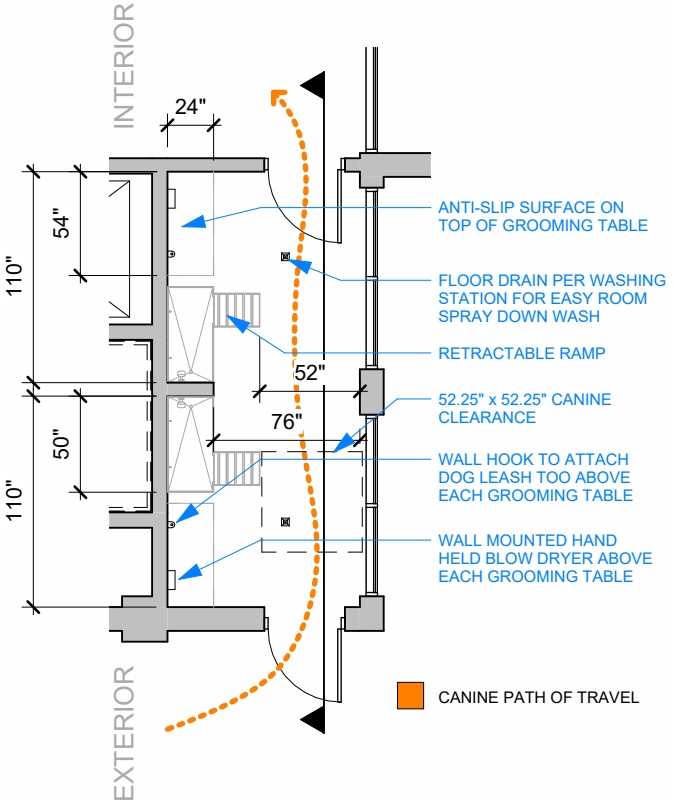


FIG 3.25 *[LEFT]*

Partial floor plan callout of a typical cleaning spa facility.

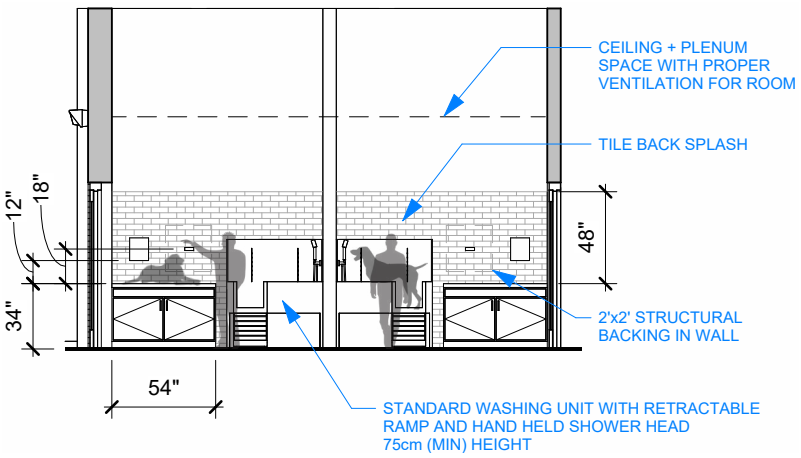


FIG 3.26 *[LEFT]*

Elevation of a typical cleaning spa facility.



FIG 3.27 *[RIGHT]*

Example of how a Pet Cleaning facility can look like with standard stations to order as furniture equipment. Devising wall partitions are utilized to separate the drying area from the washing areas.



FIG 3.28 *[RIGHT]*

Example of how a Pet Cleaning facility can look like with standard stations to order as furniture equipment. Since drying area is not adjacent to washing areas, no devising partition is needed.



FIG 3.29 *[RIGHT]*

Example of permanent pet washing stations at Paw and Paw.

A.3.2.3 | PET RELIEF AREA

Design Standard:

Implement pet relief areas in immediate adjacency to the building entrances that not only supports the building occupants, but is also open to the general public to use.

Specification:

- Req'd Area = 53.82 ft^2 (5 m^2) min / relief area [14]
- Canine Occupancy = Assume 1 dog / unit
- Avg. Canine Length = 46.25 in (1174.75 mm) [15]
- Min Floor Space = 18.96 ft^2 (1.76 m^2) [16]
- Total Pet Relief Area = 10% of Total Canine Occupancy Area [16]

Comfortability:

- Convenience achieved with ample opportunities for dogs to relieve themselves
- Each relief area shall have "objects of familiarity" to create a welcoming space for dogs, such as artificial fire hydrant posts. [17]
- Adequate lighting to be provided for all relief spaces

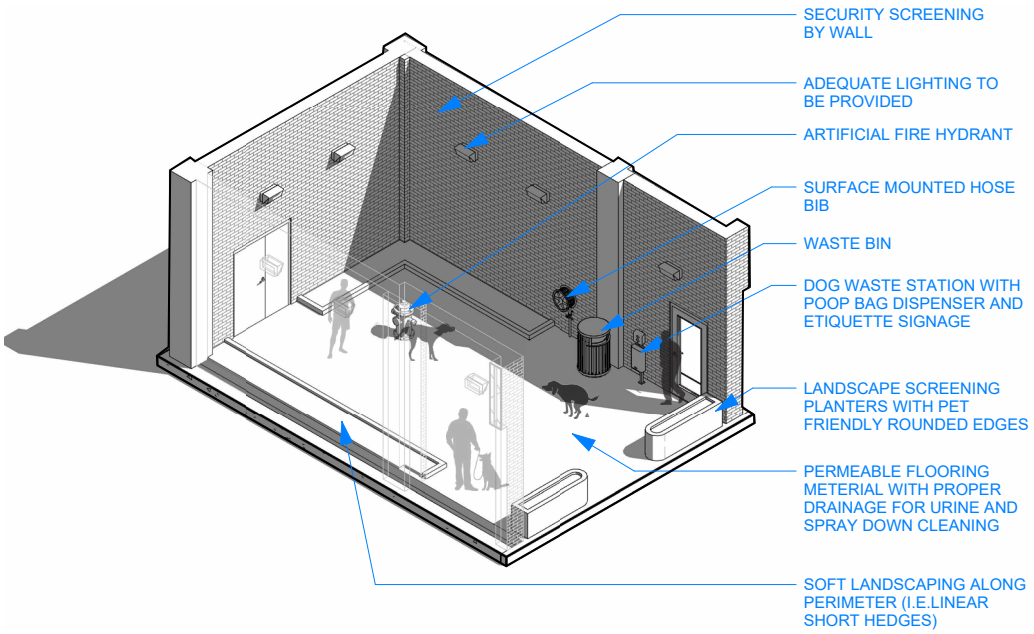
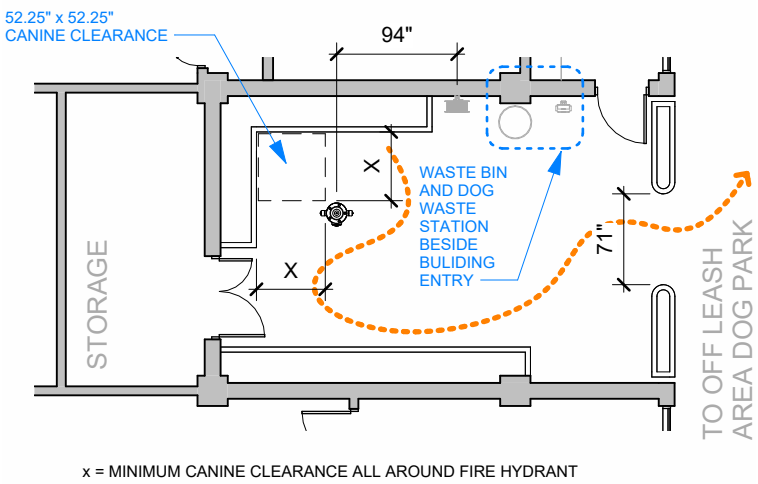


FIG 3.30 *[LEFT]*

Axonometric view of typical exterior pet relief area at grade.

FIG 3.31 *[RIGHT]*

Partial floor plan callout of typical exterior pet relief area at grade.



Health:

- Mitigation of dog poop left on floor can be achieved with more relief facilities.
- Required Info Sign to be installed at door entrance:

"Pick up after your dog"
"Pet Relief Area"

Texture & Materials:

- Utilize durable and ease-of-cleaning materials (refer to section E 3.4.6):
    - o Pea Gravel
    - o Concrete
- Protective membranes used for drainage.
- Surface materials for relief area include (refer to section E 3.4.6):
    - o Grass
    - o Artificial turf

Durability & Maintenance:

- Hose bib connections to be located beside all pet relief areas for regular hose-down cleaning,
- All relief areas to have the following:
    - o Waste bin
    - o Poo bag dispenser
    - o Etiquette sign

14. Inspired by Toronto Pet Friendly Design Guidelines and Best Practices for New Multi- Unit Buildings for 3 large dogs
15. I took the average of the 6 largest breeds registered under the AKC to account for the "worst case scenario"
16. USDA. 2022. 'Animal Care Tech Note: Minimum Space Requirements for Dogs'.
17. Bekoff, Marc, and Jessica Pierce. 2019. Unleashing Your Dog: A Field Guide to Giving Your Canine Companion the Best Life Possible. Illustrated edition. Novato, California: New World Library.

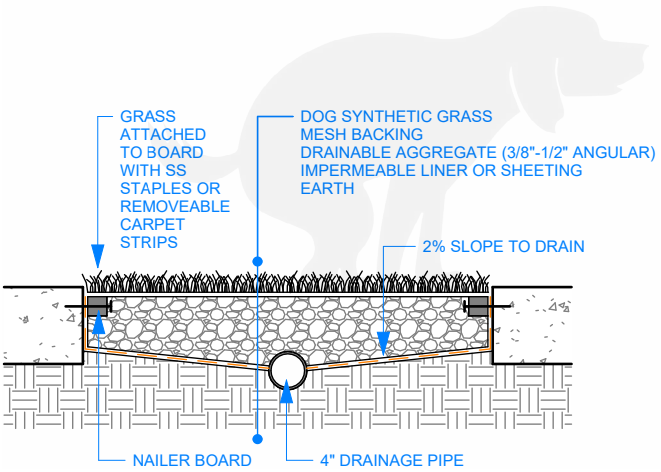


FIG 3.32 *[LEFT]*

Section detail of typical pet relief floor assembly with synthetic turf over aggregate.

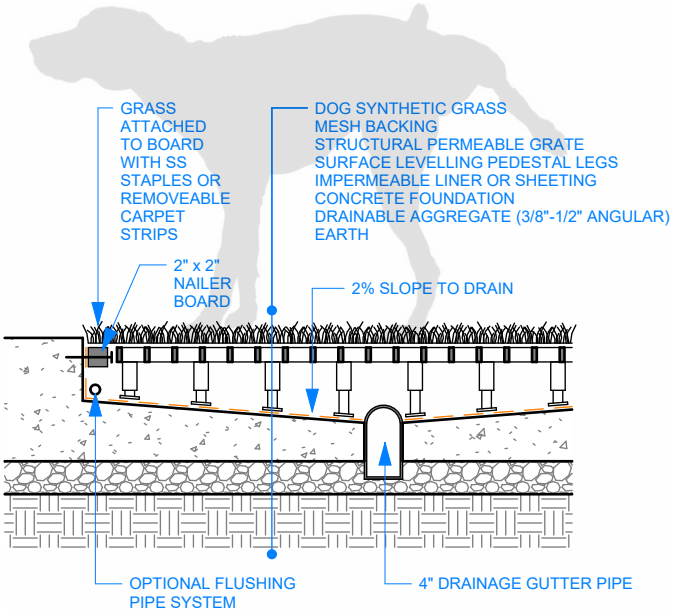


FIG 3.33 *[LEFT]*

Section detail of typical pet relief floor assembly with synthetic turf over pedestals.



FIG 3.34 *[RIGHT]*

Example of outdoor pet relief area at Nashville International Airport (BNA)



FIG 3.35 *[RIGHT]*

Example of artificial fire hydrant in pet relief area.

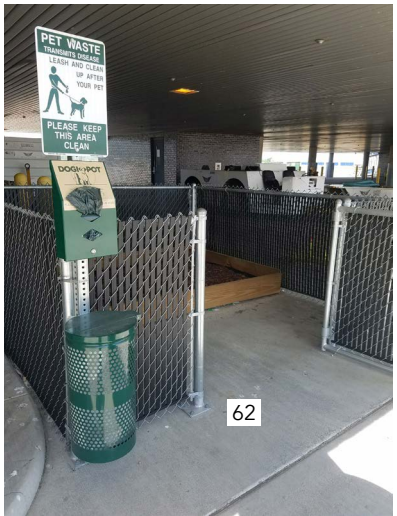


FIG 3.36 *[RIGHT - LEFT]*

Example of canine disposal station with poop bag dispenser and etiquette sign.

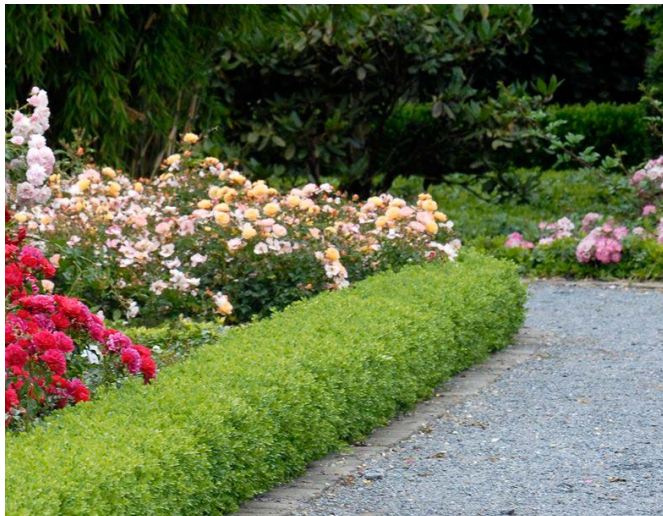


FIG 3.37 *[RIGHT - RIGHT]*

Example of short hedges as soft perimeter landscaping for pet relief area.

A.3.2.4 | COMMERCIAL SUPPORT SPACES

Design Standard:

It is strongly encouraged to implement commercial and retail spaces that offer canine support to the building users in addition to the surrounding public realms.

Specification:

- Commercial retail spaces to be located along the street front, easily accessible to the public.

Comfortability:

- Types of canine support programs include:
    - o Doggy Daycares (i.e. Dogtopia)
    - o Pet Retail Stores (i.e. RensPets, Petsmart, Global Petfoods, etc.)

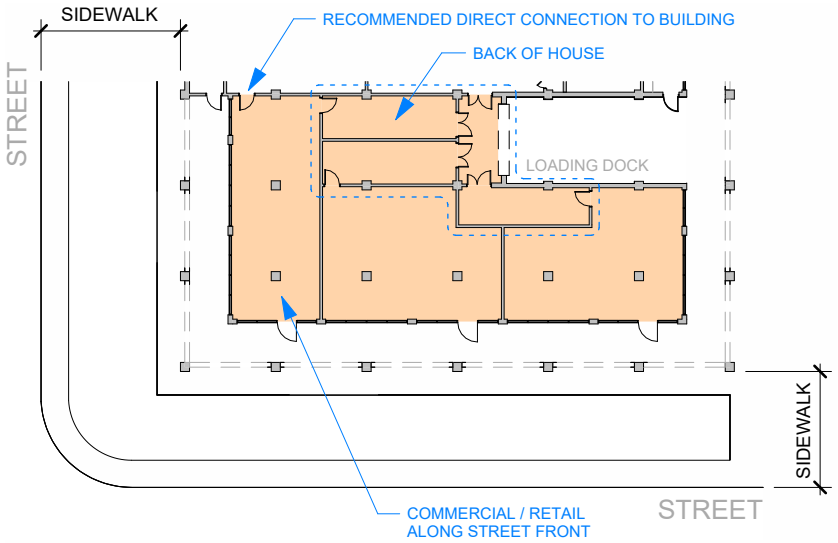


FIG 3.38 *[LEFT]*

Partial floor plan callout of typical ground layout, showing commercial retail spaces along the street front.



FIG 3.39 *[RIGHT]*

Example of short hedges as soft perimeter landscaping for pet relief area.



FIG 3.40 *[RIGHT - LEFT]*

Example of Dogtopia Reception Desk.

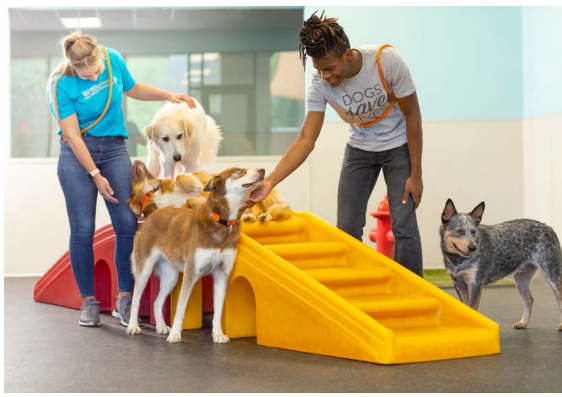


FIG 3.41 *[RIGHT - RIGHT]*

Example of Dogtopia dogs playing in room with daycare employees.

Health:

- Types of canine support programs include:
    - o Vet Clinics
    - o Dog Walking Companies

Acoustics:

- Individual Units to be acoustically separated from each other and the rest of the building (more info found in section D 3.4.1)



FIG 3.42 *[LEFT]*

Petsmart building exterior view example.



FIG 3.43 *[LEFT]*

Ren's Pets building exterior view example.



FIG 3.44 *[LEFT]*

Global Pet Foods building exterior example.



FIG 3.45 *[RIGHT]*

Example of dog at vet.



FIG 3.46 *[RIGHT]*

Example of multiple dogs being walked by a local dog walking company in Liberty Village.

A.3.2.5 | POPS: PRIVATELY OWNED PUBLICLY ACCESSIBLE SPACES

Design Standard:

Canine-centric POP spaces shall be implemented throughout the ground level for use by the entire community while remaining privately owned and maintained. These spaces shall be secured, following negotiations with developers during review and approval processes, while adhering to local municipal design guidelines in addition to these guidelines. [18]

Specification:

- Located POPS in areas that are easily visible to the surrounding public.
- Implement signage to make it clear that these spaces are open and free for the public to use.

Health:

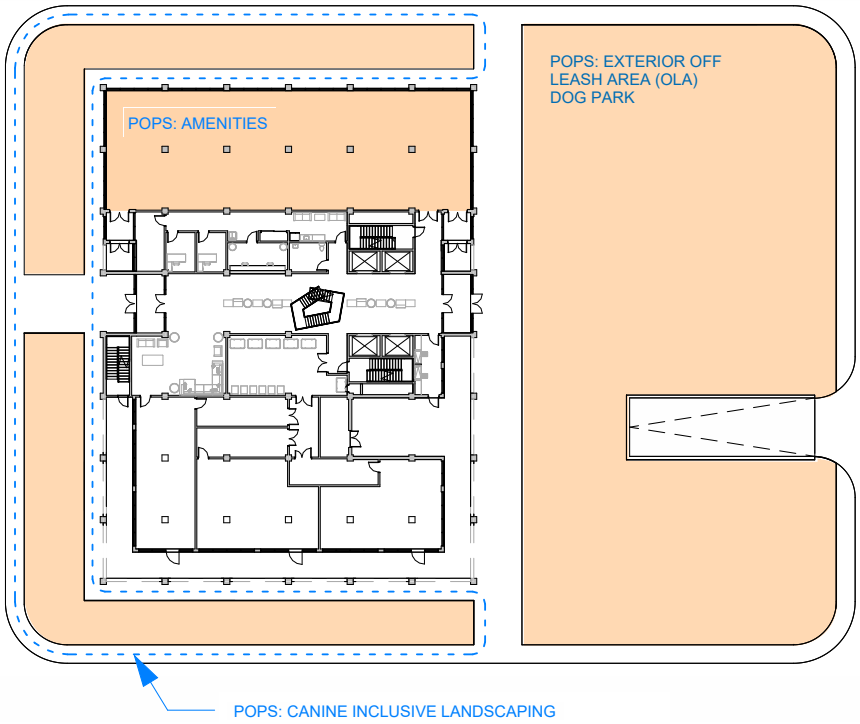
- Types of canine-centric POP spaces include:
    - o Outdoor off-leash dog parks
    - o Indoor off-leash dog parks
    - o Intentional landscaping
    - o Amenity Spaces in building
    - o Pet Relief areas

Durability & Maintenance:

- POPS to be maintained by private property owners for which they are located on.

FIG 3.47 *[RIGHT]*

Floor plan of typical ground layout, showing POP spaces around the property.



18. Inspired by Toronto Pet Friendly Design Guidelines and Best Practices for New Multi- Unit Buildings

A.3.2.5 | POPS

A.3.2.5.1 | OFF LEASH AREA (OLA) DOG PARK

Design Standard:

An off-leash dog park shall be implemented on property beside the building to be accessible to the surround community in addition to the building users.

Specification:

- Perimeter Fencing Height (min) = 47.24 in (1.2m) [19]
- Req'd OLA Length (min) = 32.81 ft (10m) [19]
- Avg. Canine Height = 47.816 in (1.214 m) [20]
- Red'd OLA Area (min) = (Total Canine Occupancy x 18.96 ft^2) x 2 [21]
  = (Total Canine Occupancy x 1.76 m^2) x 2

FIG 3.48 *[BELOW]*

Axonometric view of a typical off leash area dog park.

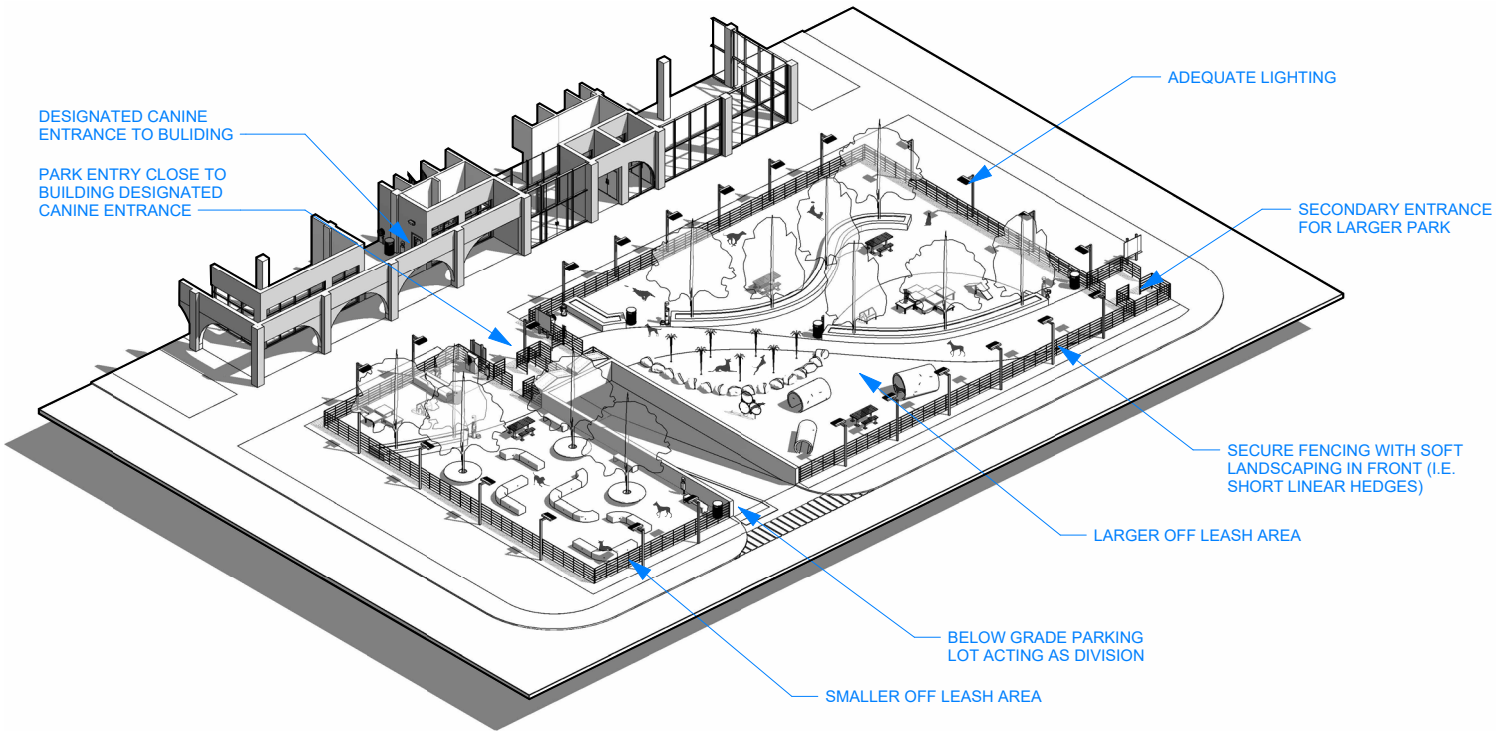




FIG 3.49 *[RIGHT]*

An example render by Sterling Bay and SOM of a future dog park in Chicago's Lincoln Yards development. The area is populated with numerous trees to provide optimal shade, complemented by a variety of surface materials, including a sand pit, grassy areas, and a water feature.

Comfortability:

- Include objects of familiarity for canine enrichment: [22]
    - o Rocks playfully laid out
    - o Modular/moveable obstacles for agility training
    - o landscaping (i.e. shrubs, trees, etc.)
- Include double gate entrance
- Adequate lighting to be provided for all OLA spaces, especially for safe nighttime usage.
- Avoid designs of blind spots (i.e. no "L" shapes) [23]
- Include plenty of seating for owners
- Provide adequate shading for dogs and people to rest in. [19]
- Include winter season considerations (refer to section E 3.4.4.2): [19]
    - o Covered spaces
    - o Canopies
    - o Outdoor space heaters
    - o Strategic landscaping (i.e. trees) to break wind
    - o Heated flooring for paved areas

Health:

- Required Info Sign to be installed at the entrance:
    - o Etiquette reminders such as "Pick up after your dog"
    - o Offer info on canine wellbeing (refer to section 2.2 ethograms)
    - o Make clear that space is POPS and opened to the public for use.
- Highly recommend to include water features to account for hot seasons
- Include drinking fountains throughout OLA

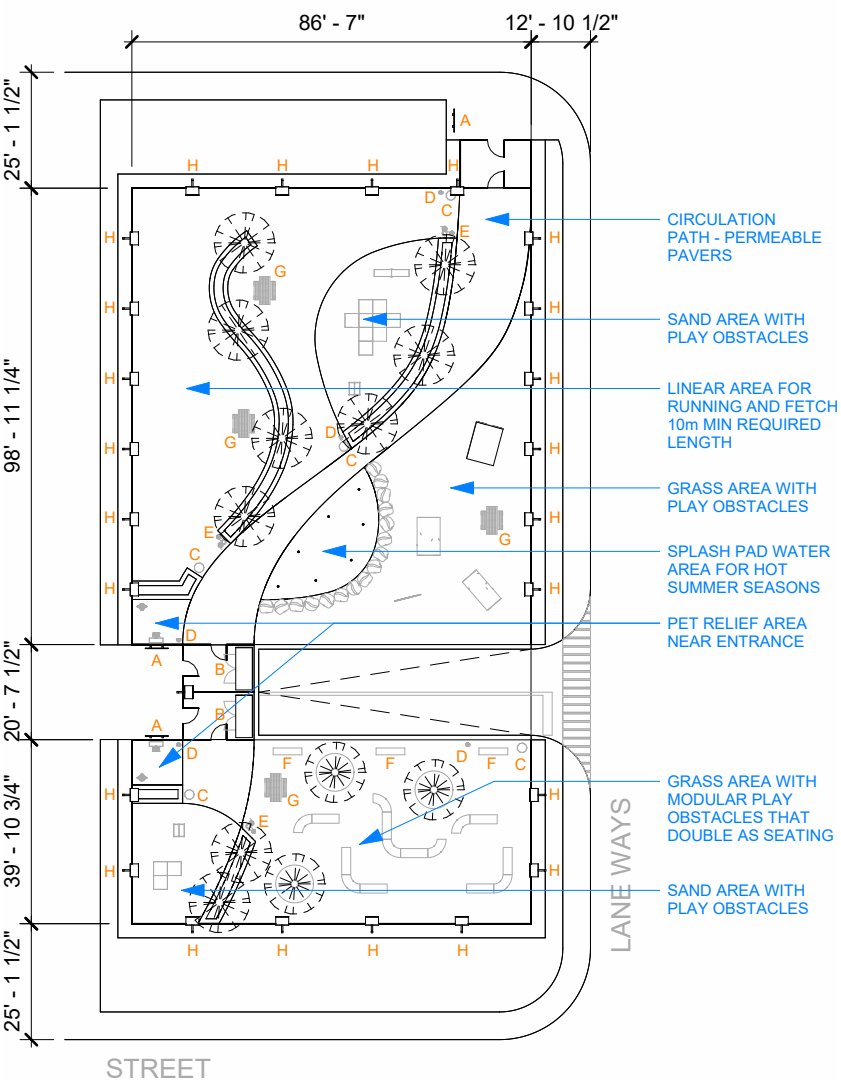


FIG 3.50 *[LEFT]*

Floor plan of a typical off leash area dog park.

A. PARK INFO SIGN
B. STORAGE SHED
C. GARBAGE BIN
D. POOP BAG DISPENSER STATION
E. WATER FOUNTAIN
F. BENCH
G. PICNIC TABLE
H. LIGHTING



FIG 3.51 *[RIGHT]*

An example of dogs playing in splash pad. This is a crucial feature to consider during hot summer seasons, which can be dangerous for dogs. Access to water for cooling down helps prevent the risk of heat stroke.



FIG 3.52 *[RIGHT]*

An example of dogs playing in the park with canine playground equipment. These agility inspired obstacles help mentally and physically enrich dogs during play sessions.



FIG 3.53 *[RIGHT]*

This community tennis court has a storage shed beside it for controlled access to the public. A similar concept can be implemented for building users to access for play toys.

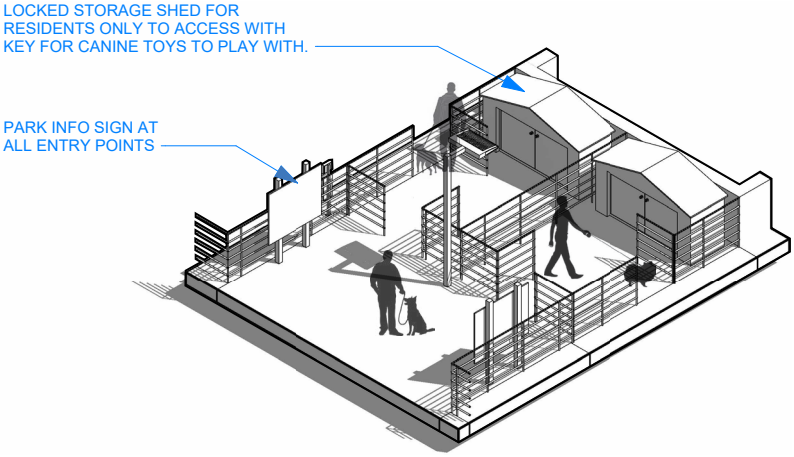


FIG 3.54 *[LEFT]*

Axonometric view of the entrance into the OLA dog park.

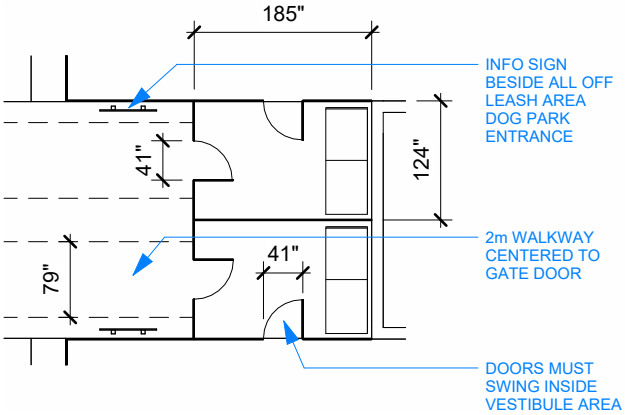


FIG 3.55 *[LEFT]*

Floor plan of the entrance into the OLA dog park.

Texture & Materials

- Surface materials can include (more info found in section E 3.4.6):
    - o Synthetic grass
    - o Real grass
    - o Mulch
    - o Dirt
    - o Rocks
    - o Concrete

Durability & Maintenance:

- Include waste bins at all entrances into OLA
- Include poop bag dispenser station with etiquette sign and disposal bin beside relief area
- For outdoor OLA, rainwater run off is to be considered through adequate drainage [24]
- Hose bib connection to be located beside dedicated relief area and central to OLA for regular cleaning OR consideration of irrigation system as an alternative for regular rinsing. [24]

Acoustics:

- It is recommended to locate OLA away from loud vehicular traffic, however if not possible, then implement acoustic separation strategies between traffic and park (i.e. Trees in landscaping as separation) [25]

19. Inspired by Toronto Pet Friendly Design Guidelines and Best Practices for New Multi- Unit Buildings
20. I took the average of the 6 largest breeds registered under the AKC to account for the "worst case scenario"
21. USDA. 2022. 'Animal Care Tech Note: Minimum Space Requirements for Dogs'.
22. Bekoff, Marc, and Jessica Pierce. 2019. Unleashing Your Dog: A Field Guide to Giving Your Canine Companion the Best Life Possible. Illustrated edition. Novato, California: New World Library.
23. Horowitz, Alexandra. 2016. Inside of a Dog: What Dogs See, Smell, and Know. Young readers edition., First edtion. New York: Simon & Schuster Books for Young Readers.
24. Inspired by Toronto Pet Friendly Design Guidelines and Best Practices for New Multi- Unit Buildings
25. Bekoff, Marc, and Jessica Pierce. 2019. Unleashing Your Dog: A Field Guide to Giving Your Canine Companion the Best Life Possible. Illustrated edition. Novato, California: New World Library.



FIG 3.56 *[LEFT]*

Example of an off leash area dog park steel frame welcome sign, outlining rules and etiquette before entering.



FIG 3.57 *[LEFT]*

Example of an off leash area dog park wood frame welcome sign, outlining rules and etiquette before entering.



FIG 3.58 *[RIGHT]*

Example of trees in landscaping utilized as visual and acoustic barrier.



FIG 3.59 *[RIGHT]*

Example of human and pet drinking fountain.

FIG 3.60 *[RIGHT - LEFT]*

Example of dog waste disposal units that are part of a new city-wide system to divert dog waste from local landfills and convert it into green energy.



FIG 3.61 *[RIGHT - RIGHT]*

Example of standard round garbage bins for general waste, recycling and compost. Recommended round shapes for a more pet friendly environment.



A.3.2.5 | POPS

A.3.2.5.2 | CANINE-ACCESSIBLE LANDSCAPING

Design Standard:

Implementing a design that not only mitigates wear and tear from heavy pet activity, but also introduces opportunities for canine mental and physical enrichment.

Specification:

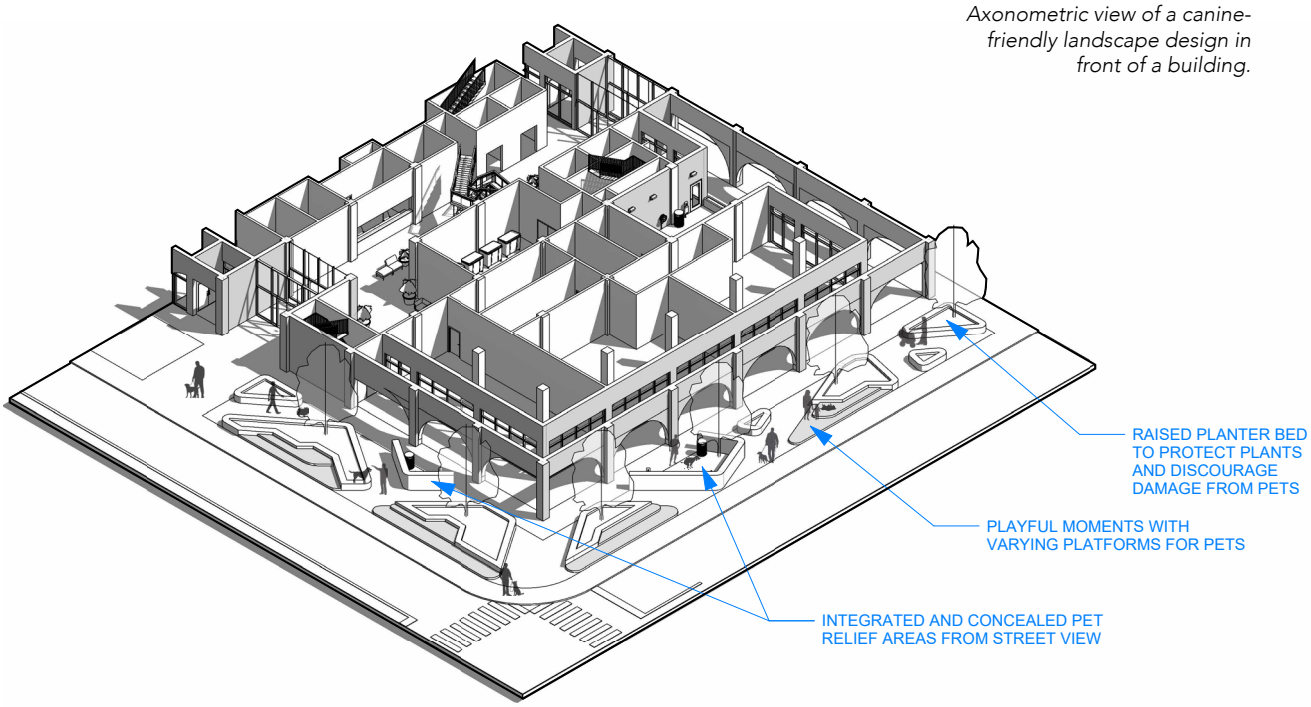
- Enrichment Walking Path Width (min) = 18 in (457.2 mm) [26]
- Walkway Width (min) = 6.56 ft (2 m) [27]
- Integrated pet relief areas to be concealed from the street if possible.

Comfortability:

- Plant beds shall be raised and have enrichment walking paths all around that double as public seating and walking paths for dogs.
- Pet relief requirements to follow that of section A 3.2.3

FIG 3.62 *[BELOW]*

Axonometric view of a canine-friendly landscape design in front of a building.



Health:

- Avoid harmful plant species that may be toxic to dogs, such as (more info found in section E 3.4.6):
    - o Autumn Crocus
    - o Azaleas
    - o Cyclamen
    - o Dieffenbachia
    - o Lily of the Valley
    - o Oleander
    - o Philodendron
    - o Sago Palm
    - o Tulip and Hyacinth
    - o Yew
- Recommended plants that are durable against canine urine include:
    - o Variegated Moor Grass
    - o Roses
    - o Day Lilies
    - o Lady's Mantle

Texture & Materials:

- Permeable pavers and hard surfaces on grade
- Soil for plants and grassy areas raised on bed
- Avoid the following loose materials in high traffic areas:
    - o Pea Gravel
    - o Mulch
    - o Wood Chips

Durability & Maintenance:

- Implement pet relief areas throughout landscaping design to provide plenty of opportunity for relief. [28]
- Include waste bin with optional poop bags for owners and etiquette sign near pet relief areas.

26. Inspired by standard seating chair depth.
27. Inspired by Toronto Pet Friendly Design Guidelines and Best Practices for New Multi- Unit Buildings
28. Inspired by the 2014 Toronto Condominium Public Consultation survey by SWERHUN

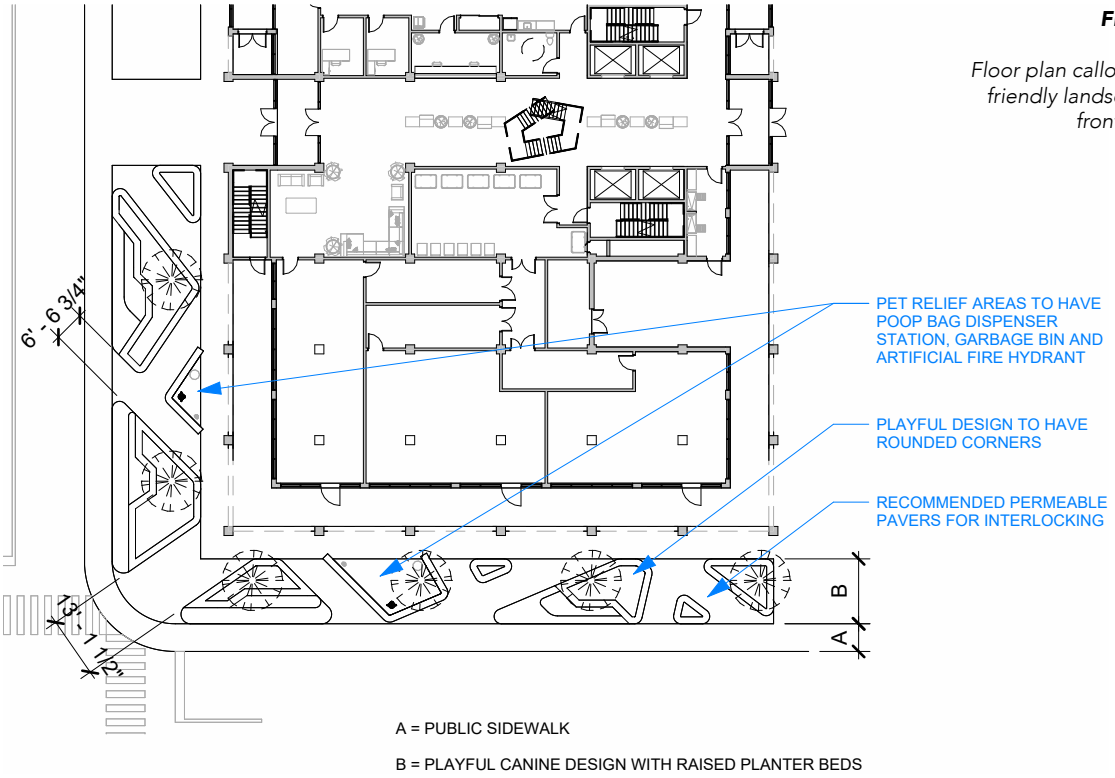


FIG 3.63 *[LEFT]*

Floor plan callout of a canine-friendly landscape design in front of a building.

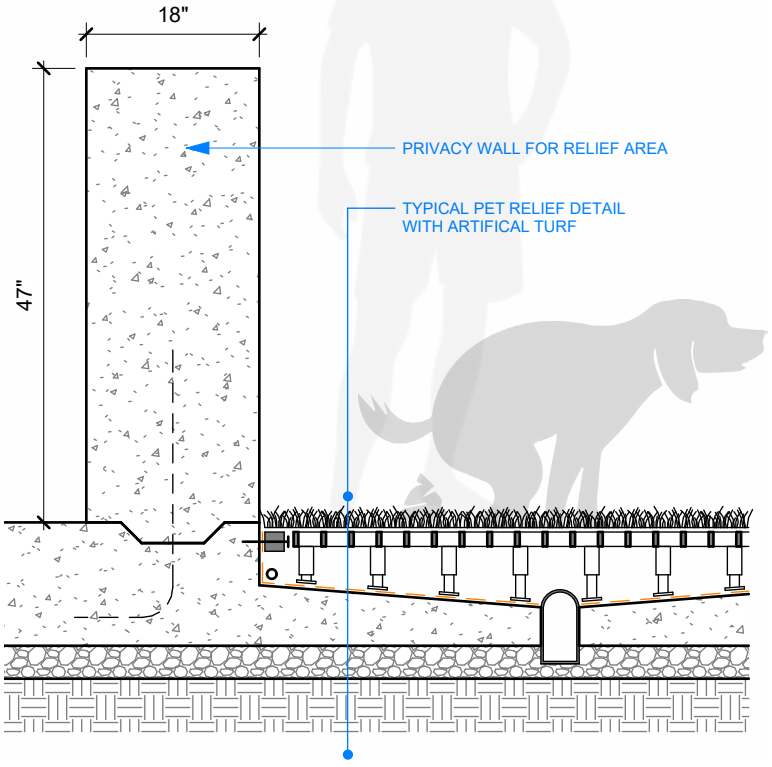


FIG 3.64 *[LEFT]*

Detail of pet relief area integrated in landscaping design with privacy wall.

FIG 3.65 *[RIGHT]*

Detail of typical raised planted bed with enrichment walking path.

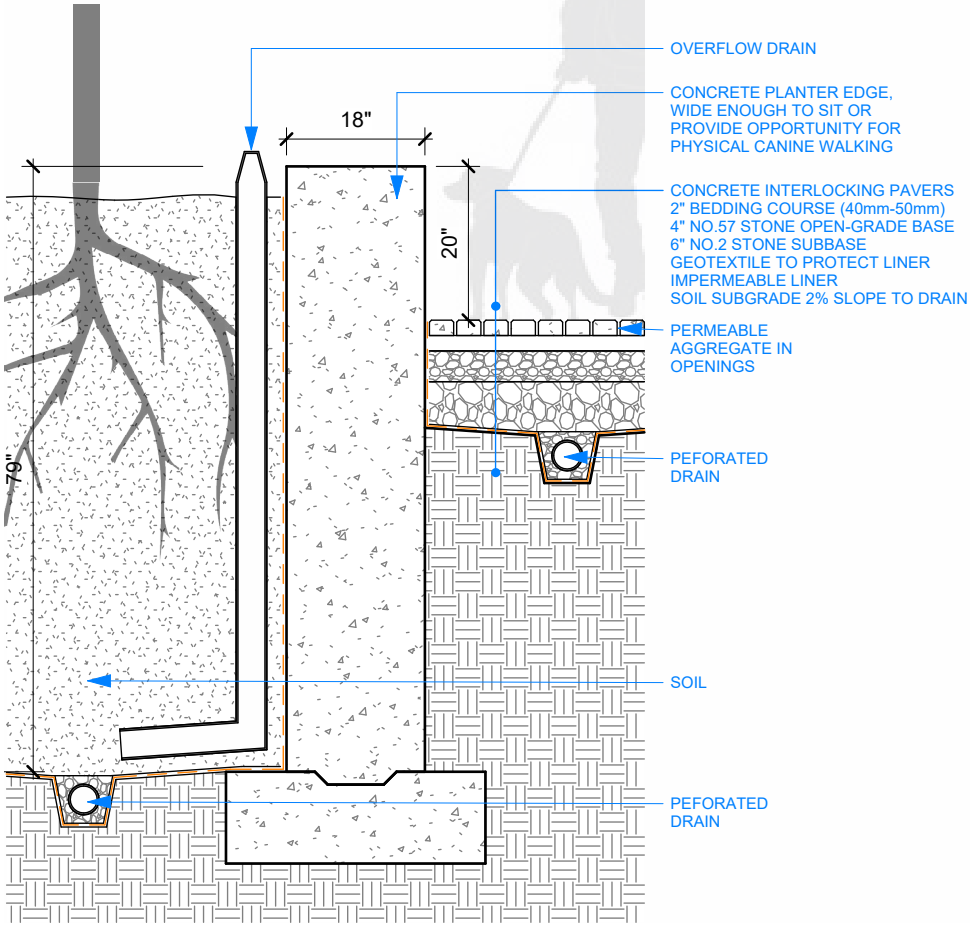


FIG 3.66 *[RIGHT]*

Detail of typical multilevel wood deck for encouraged physical enrichment.

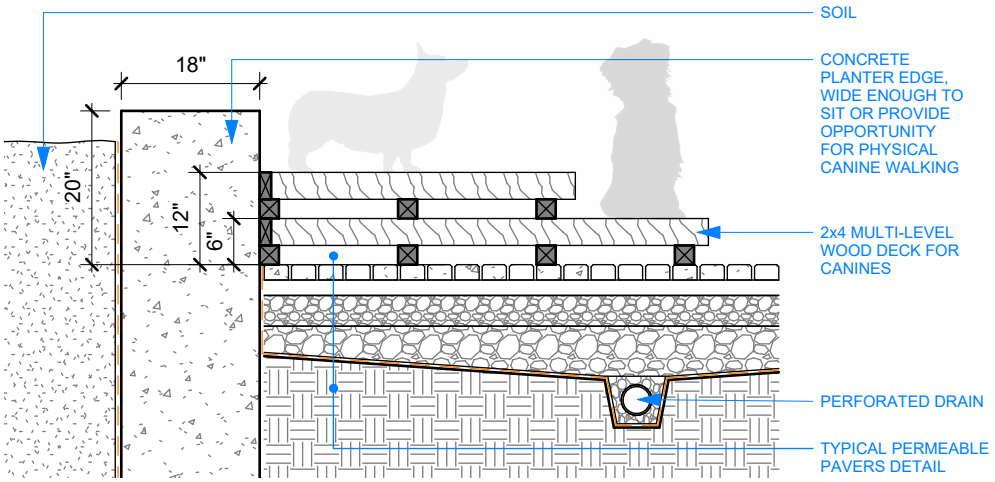




FIG 3.67 *[LEFT]*

Example of playful landscaping with angles and soft geometric shapes for the grass.



FIG 3.68 *[RIGHT]*

Example of a playful multi-level wood deck along landscape edge.



FIG 3.69 *[RIGHT]*

Example of integrated pet relief area in landscaping design.

B.3.2.6 | INTERIOR PET RELIEF AREAS

Design Standard:

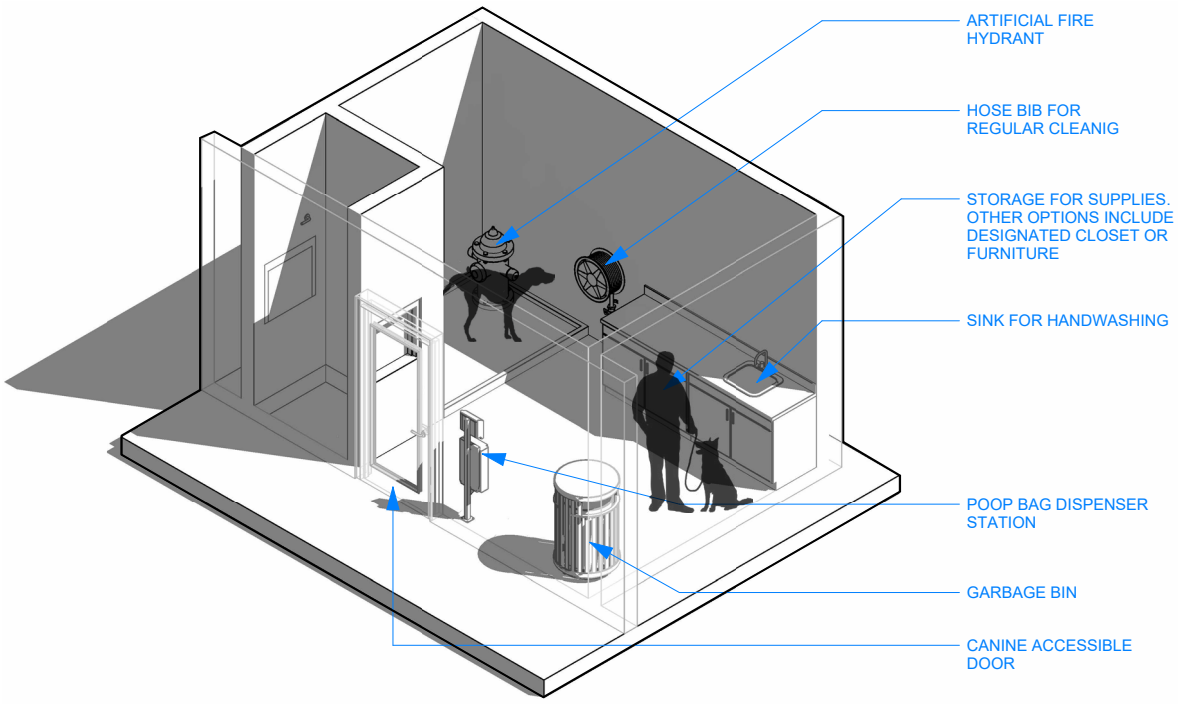
Provide plenty of opportunities for pets to relieve themselves for convenience under tight schedules and during undesirable weather conditions (i.e. winter snowstorms, heavy rain walls, high windy days, etc.)

Specification:

- Req'd Area = 53.82 ft^2 (5 m^2) (min) / relief area
- Canine Occupancy = Assume 1 dog/unit
- Avg. Canine Length = 46.25 in (1174.75 mm)
- Min Floor Space = 18.96 ft^2 (1.76 m^2)
- Total Pet Relief Area Dispersed throughout Building = 10% of Total canine occupancy area (min)

FIG 3.70 *[BELOW]*

Axonometric view of a typical interior pet relief area.



Comfortability:

- Each relief area shall have an artificial fire hydrant post
- Proper ventilation is required with 100% exhaust. Recommended solutions include:
    - o Mechanical Energy Recovery Systems
    - o Operable Windows

Health:

- Indoor relief areas shall be located beside central building waste disposal chute for ease of access.
- The following shall be implemented in room:
    - o Sink
    - o Hand Soap
    - o Sanitary station
    - o Etiquette info signs

Texture & Materials:

- The relief areas shall utilize durable and ease-of-cleaning materials such as artificial turf.
- Protective membranes used for drainage
- All other surfaces shall utilize durable and ease-of-cleaning materials such as (more info found in section E 3.4.5.1):
    - o Tiles
    - o Stones
    - o Vinyl
    - o Concrete

Durability & Maintenance:

- Building to provide hose bib connection beside all relief areas for regular cleaning.
- All relief areas to have waste bins with poop bag dispensers stations.

Acoustics:

- Walls to be acoustically separated from rest of building as per section D.3.4.1.

29. Inspired by Toronto Pet Friendly Design Guidelines and Best Practices for New Multi- Unit Buildings for 3 large dogs
30. I took the average of the 6 largest breeds registered under the AKC to account for the "worst case scenario"
31. USDA. 2022. 'Animal Care Tech Note: Minimum Space Requirements for Dogs'.

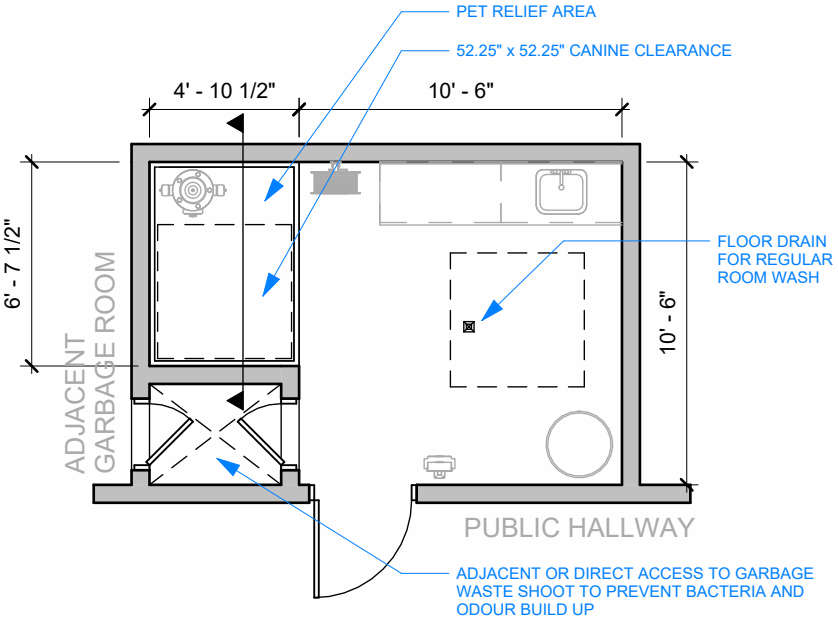


FIG 3.71 *[LEFT]*

Floor plan callout of a typical interior pet relief area.

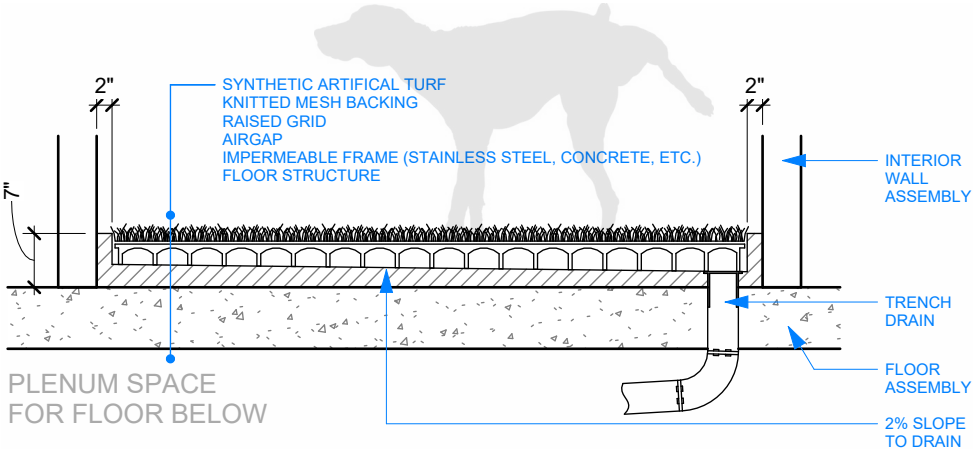


FIG 3.72 *[LEFT]*

Typical section detail of an interior pet relief area.



FIG 3.73 *[RIGHT]*

Example of interior pet relief area in El Paso International Airport (ELP).



FIG 3.74 *[RIGHT]*

Example of interior pet relief area in Hartsfield-Jackson Atlanta Interna-tional Airport (ATL).

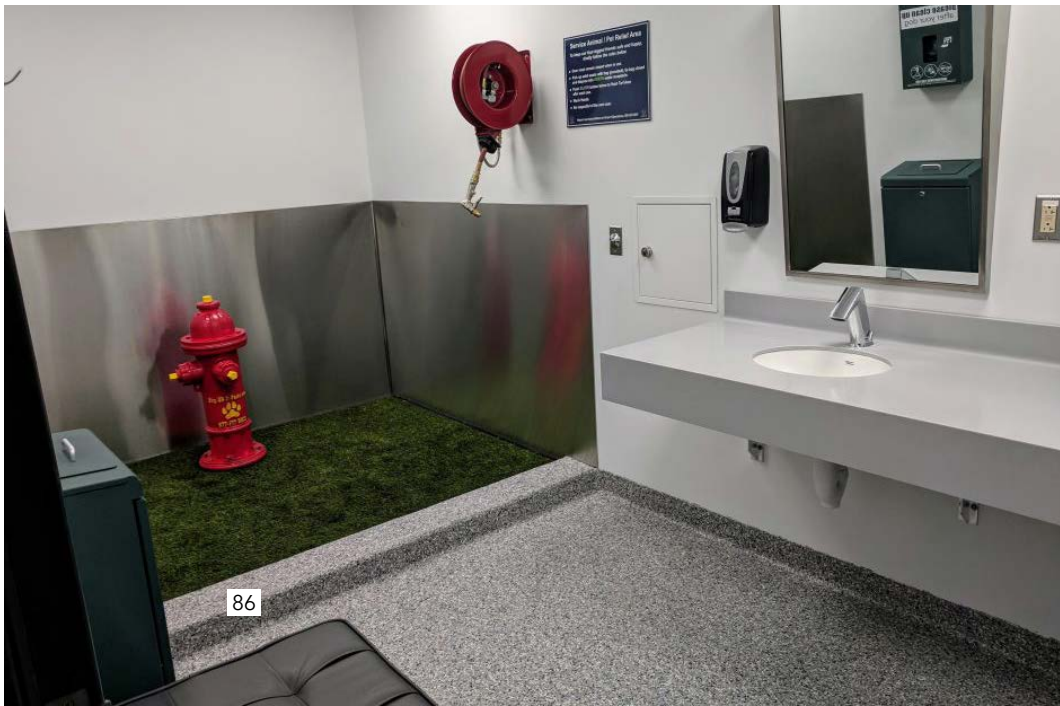


FIG 3.75 *[RIGHT]*

Example of interior pet relief area in Bradley International Airport (BDL).

B.3.2.7 | INTERIOR OFF-LEASH AREAS (OLA)

Design Standard:

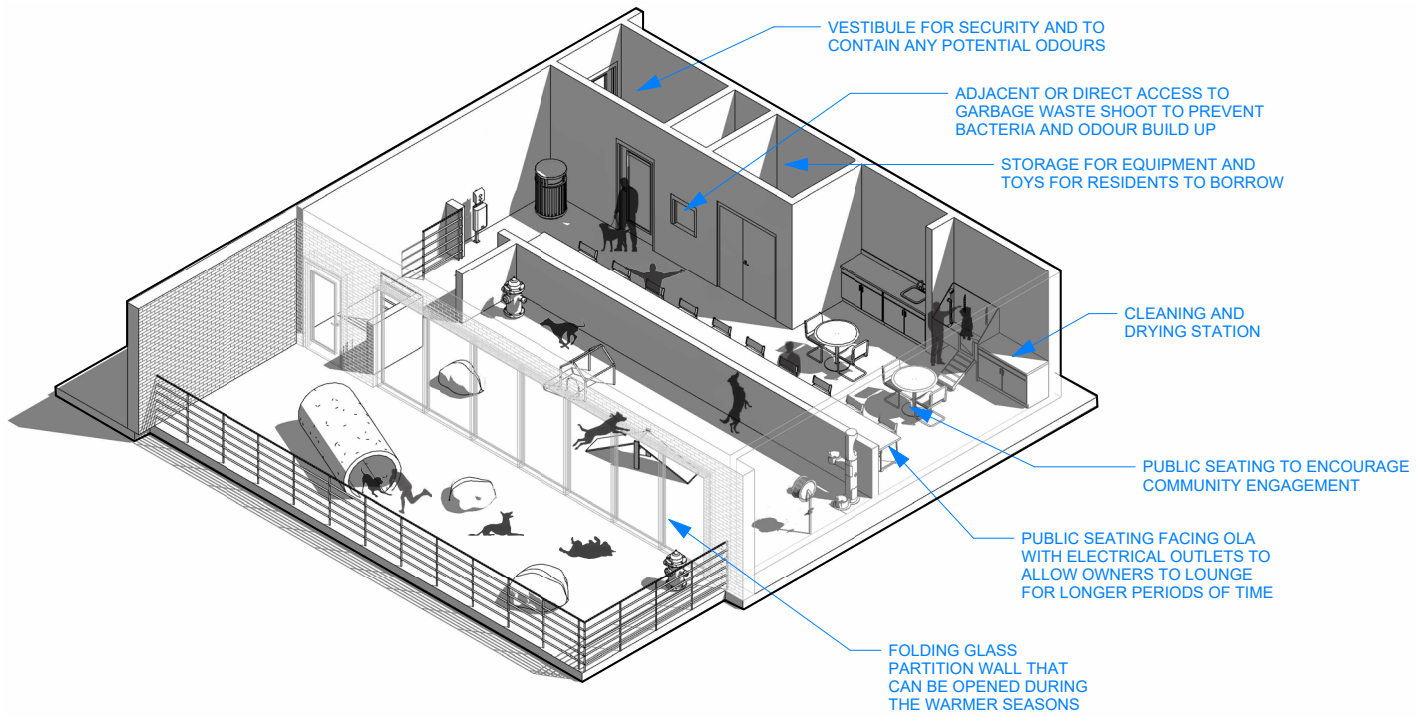
An off-leash area shall be implemented at the middle floor level of the building, as well as on the roof for more enrichment, social and exercise opportunities for building users.

Specification:

- Perimeter Fencing Height (min) = 3.94 ft (1.2 m) [32]
  - o Option to enclose play area with glass above fence.
- Req'd OLA Area (min) = 430.56 ft^2 (40 m^2) [32]
- Req'd OLA Length (min) = 32.81 ft (10 m) [32]
- Durable Material Height (min) on Wall = 3.94 ft (1.2 m) [33]

FIG 3.76 *[BELOW]*

Axonometric view of a typical interior off-leash area with an exterior portion.



Comfortability:

- Outdoor and indoor opportunities shall be implemented where possible in consideration of winter seasons.
- Proper ventilation is required with 100% exhaust. Recommended solutions include: [32]
    - o Mechanical Energy Recovery Systems
    - o Operable Windows
- Vestibule to room to be provided to contain odors and conditioned air.
- Include objects of familiarity for canine enrichment: [34]
    - o Rocks playfully laid out
    - o Modular/moveable obstacles for agility training
    - o landscaping (i.e. shrubs, trees, etc.)
- Include a double gate entrance into OLA
- Adequate lighting to be provided for all OLA rooms to accommodate nighttime usage.
- Avoid designs of blind spots (i.e. no "L" shapes) [35]
- Include plenty of seating for owners.
- Provide adequate shading for dogs and people.

Health:

- Required Info Sign to be installed at the entrance:
    - o Etiquette reminders such as "Pick up after your dog"
    - o Offer info on canine wellbeing (refer to section 2.2 ethograms)
- Highly recommend to include water feature if possible to account for hot summer seasons.
- Include the following support features in space: [32]
    - o Drinking Fountains
    - o Grooming Table
    - o Rinsing/Drying Station
    - o Storage for toys to borrow.

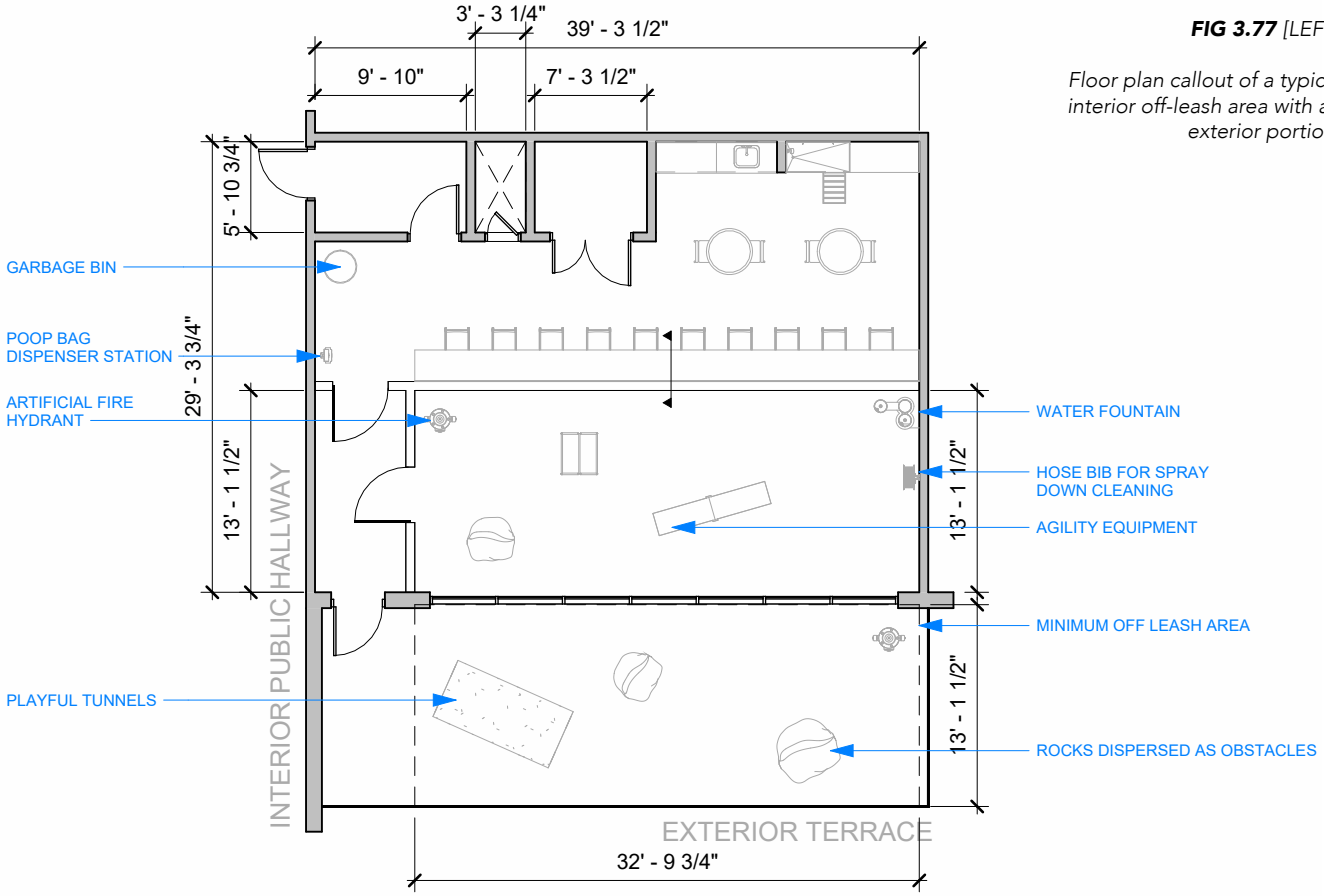


FIG 3.77 *[LEFT]*

Floor plan callout of a typical interior off-leash area with an exterior portion.

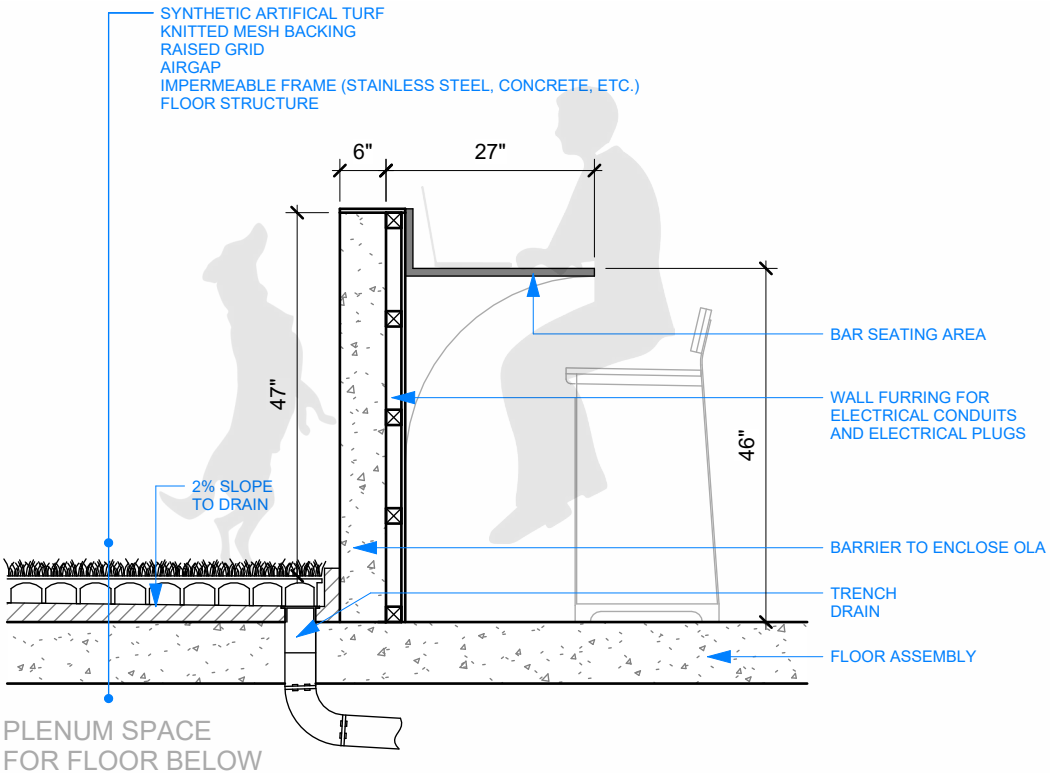


FIG 3.78 *[LEFT]*

Typical section detail of interior OLA with a public seating and workstation for the owner.

Texture & Materials:

- Play surface in OLA shall utilize artificial turf.
- All other surfaces shall utilize durable and ease-of-cleaning materials such as (more info found in section E 3.4.5.1):
    - o Tiles
    - o Stones
    - o Vinyl
    - o Concrete

Durability & Maintenance:

- Include waste bins at all entrances into OLA room,
- Include poop bag dispenser station with etiquette sign and disposal bin beside OLA entrance in room.
- Building to provide hose bib connection beside OLA spaces for regular cleaning.

Acoustics:

- Walls for the OLA room shall be acoustically separated from the rest of the building according to section D 3.4.1, D 3.4.2 and D 3.4.3. Acoustic consideration shall be for: [36]
    - o Vibration Mitigation
    - o Wall Insulation
    - o Door Acoustics
    - o Ventilation Systems

32. Inspired by Toronto Pet Friendly Design Guidelines and Best Practices for New Multi- Unit Buildings
33. USDA. 2022. 'Animal Care Tech Note: Minimum Space Requirements for Dogs'.
34. Bekoff, Marc, and Jessica Pierce. 2019. Unleashing Your Dog: A Field Guide to Giving Your Canine Companion the Best Life Possible. Illustrated edition. Novato, California: New World Library.
35. Horowitz, Alexandra. 2016. Inside of a Dog: What Dogs See, Smell, and Know. Young readers edition., First edtion. New York: Simon & Schuster Books for Young Readers.
36. Inspired by the 2014 Toronto Condominium Public Consultation survey by SWERHUN

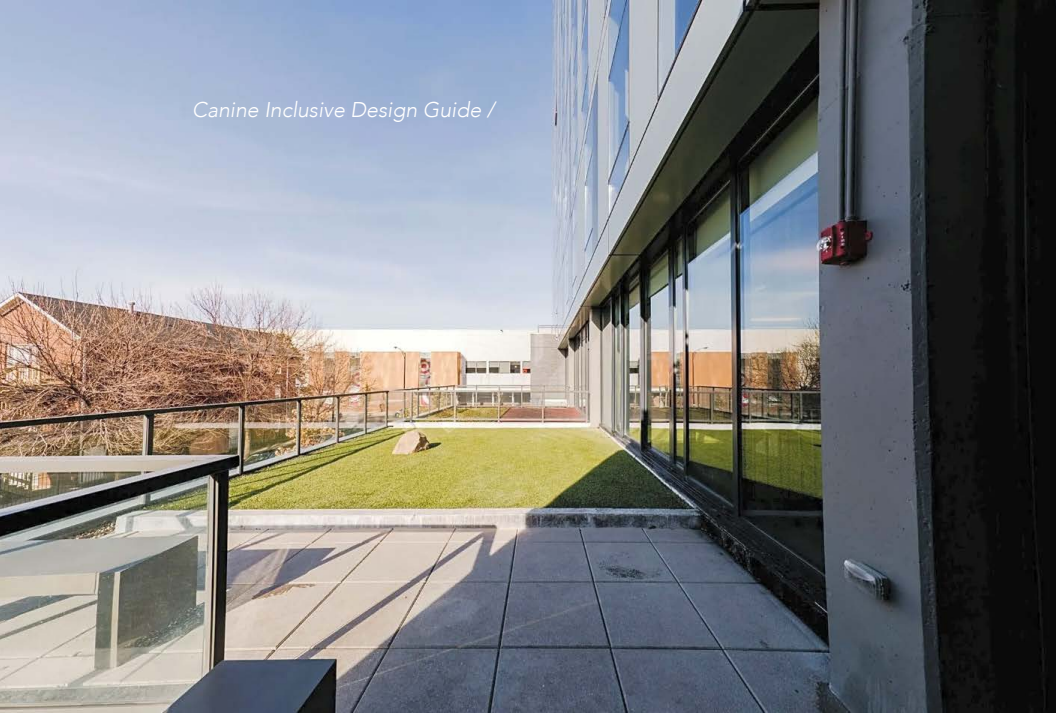


FIG 3.79 *[LEFT]*

Example of OLA outdoor terrace section that can be opened during nice weather conditions in Xavier Residence Tower in Chicago.



FIG 3.80 *[LEFT]*

Example of indoor OLA dog space in Xavier Residence Tower in Chicago.

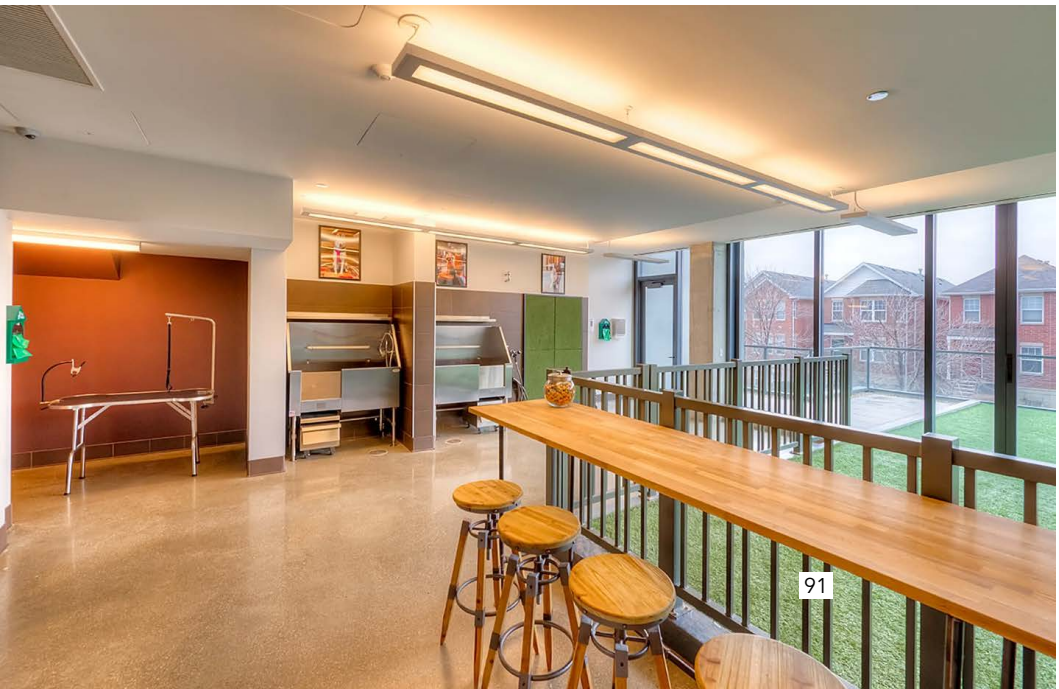


FIG 3.81 *[LEFT]*

Example of OLA room with supporting canine facilities in Xavier Residence Tower in Chicago.

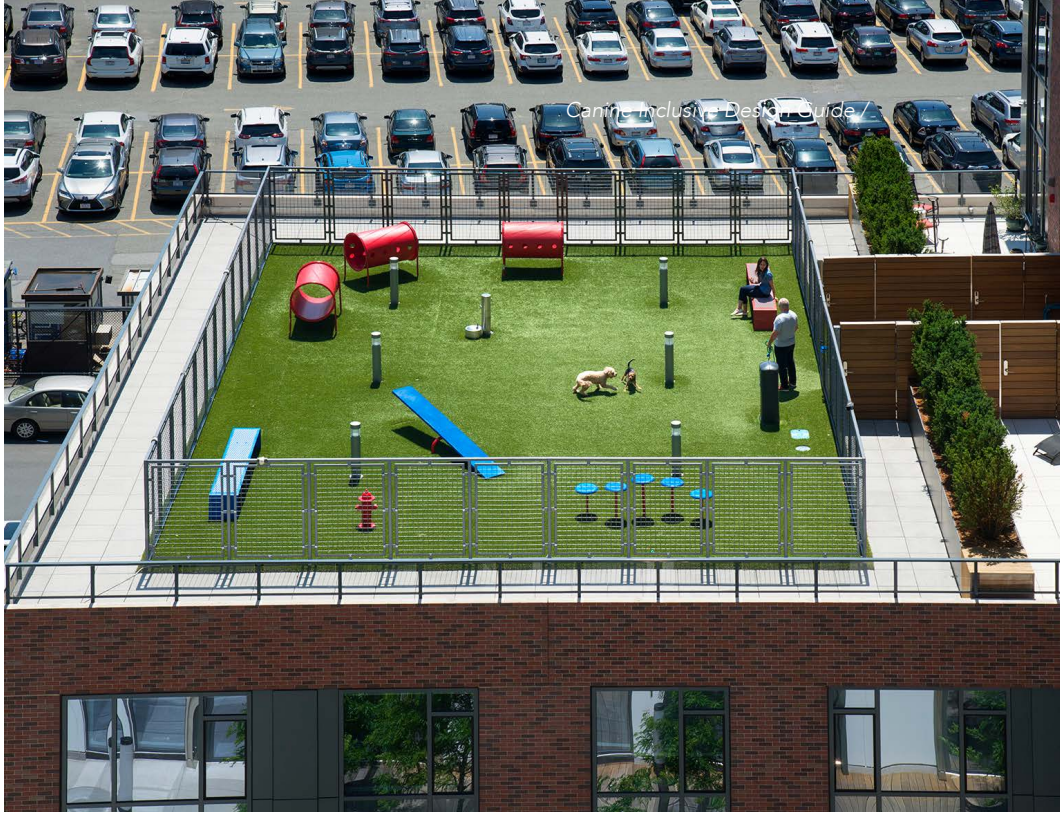


FIG 3.82 *[RIGHT]*

Example of roof top OLA dog park 345 Harrison Ave Apartments by CBT Architects.

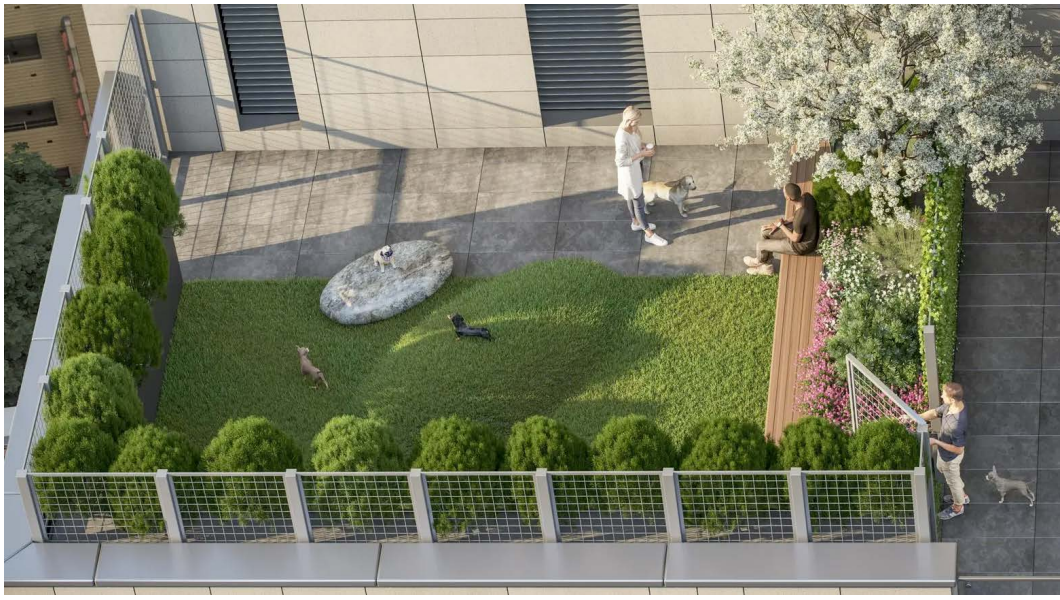


FIG 3.83 *[RIGHT]*

Example of a roof garden turned into a dog run at 77 Greenwich in lower Manhattan.

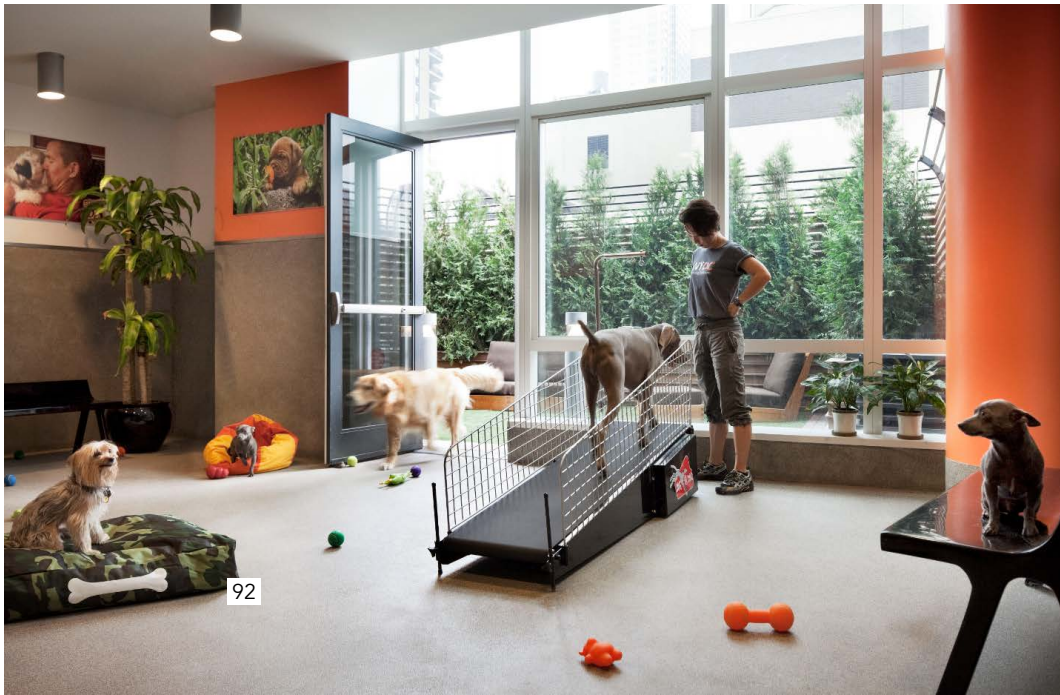


FIG 3.84 *[RIGHT]*

Example of indoor play area connected to an outdoor space through a simple door opening.

3.3 | THE UNIT SCALE

This section delves into the best practices for canine inclusivity at a smaller and more personal scale. While many of these design interventions are represented as a proposal for new development, there are still a lot of principles that can be extrapolated to retrofit existing conditions. Socialization is one of the most important factors to consider when raising a dog, but what's equally as important is providing optimal spaces for them to be alone and relax – and this can be achieved here at the unit scale.

Acoustics is heavily prioritized throughout the design where necessary in the walls, ceilings, and floors, not only to control undesired barking from within to the public realm but also to account for filtering out anxiety-inducing sounds from outside such as thunder and fireworks. Additionally, allowing for freedom and agency within the confines of the unit was carefully considered as the reality is that many of our canine companions will be home alone for many hours during the day while we go to work. This will help with reducing anxiety levels in the dog, which can result in a healthier dog and a happier lifestyle.

SECTION A :
AT GRADE

SECTION B:
ABOVE GRADE

**SECTION C:
UNIT SCALE**

SECTION D:
ASSEMBLY SCHEDULES

SECTION E:
OVERALL SUPPORT INFO

37. Bekoff, Marc, and Jessica Pierce. 2019. Unleashing Your Dog: A Field Guide to Giving Your Canine Companion the Best Life Possible. Illustrated edition. Novato, California: New World Library.

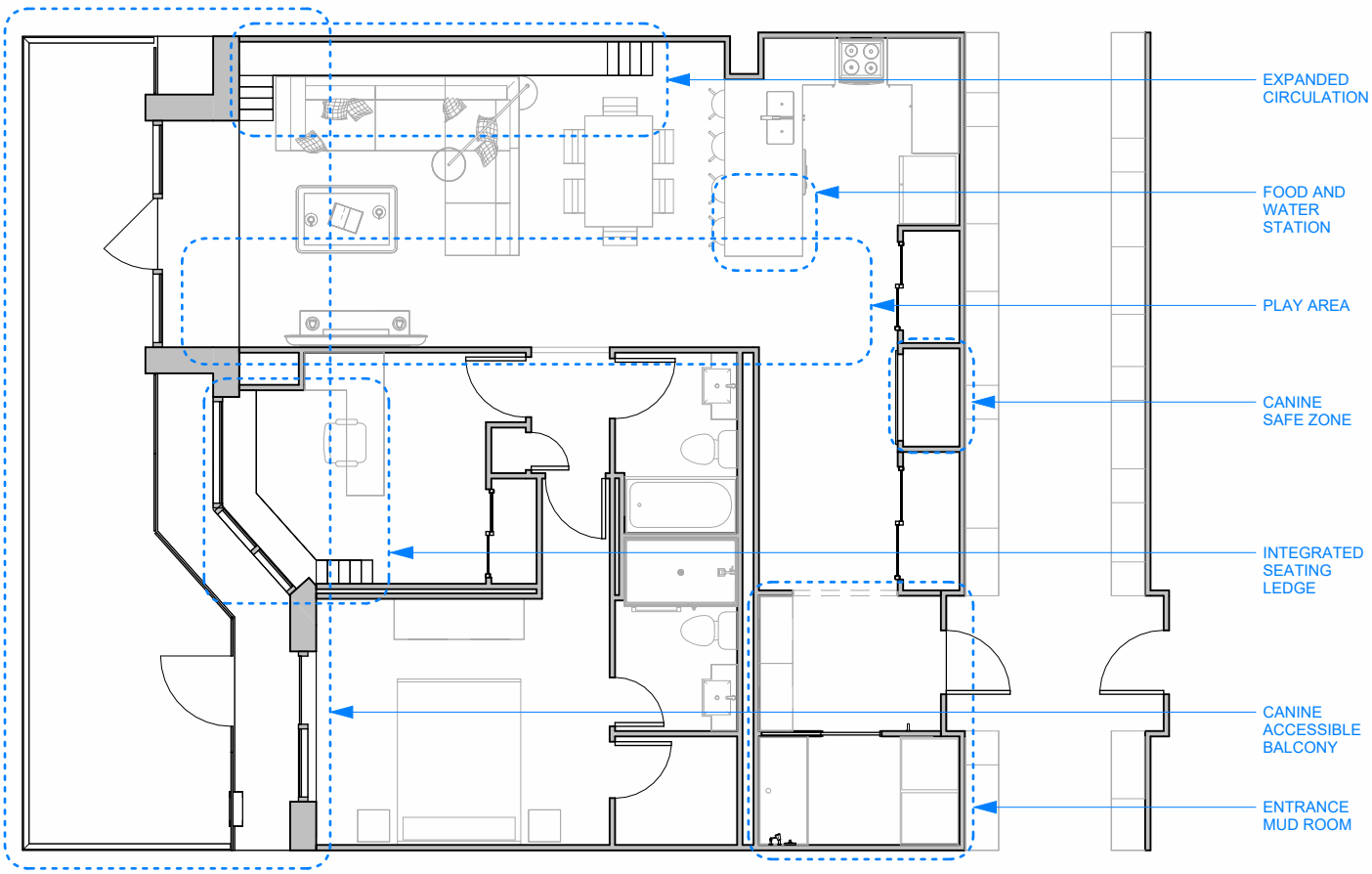


FIG 3.85 *[ABOVE]*

Floor plan of typical unit with canine-inclusive interventions.

SECTION C:
UNIT DESIGN BEST PRACTICES

C.3.3.1 | ENTRANCE MUD SPACES

Design Standard:

Provide a space to accommodate a dirty dog and contain it.

Specification:

- Rinse Area (min) = 18.96 ft^2 (1.76 m^2) [38]
- Structural backing (i.e. plywood) to be installed for wall-mounted dog hook.

Comfortability:

- Storage shall be provided at the entrance area for shoes, coats, etc., and anything else that may be mistaken as a chew toy. [39]
- It is recommended to install a wall-mounted dog hook (with structural backing) beside the entrance to temporarily tether a dog on a leash to free up your hands to get ready to leave. [40]

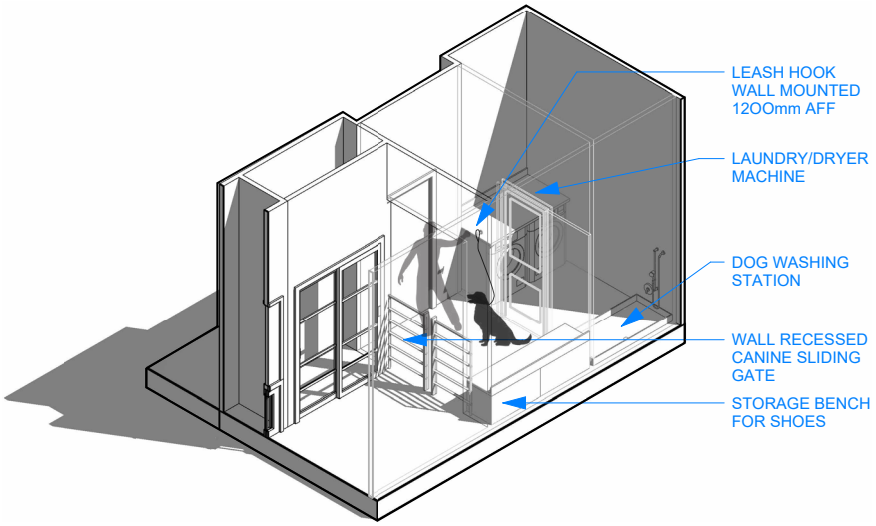
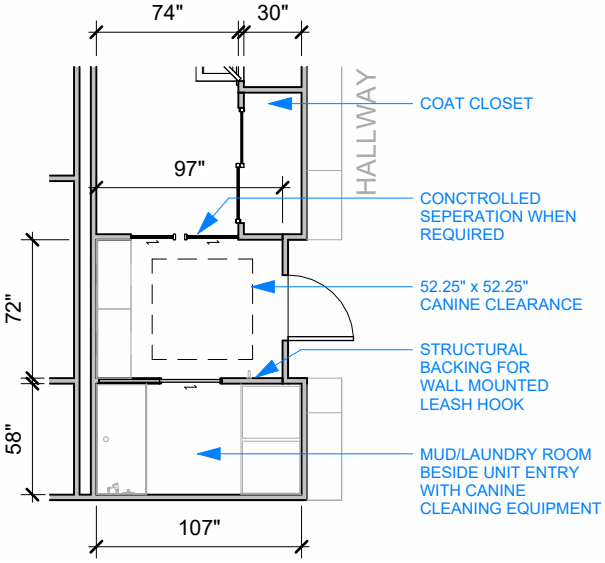


FIG 3.86 *[LEFT]*

Axonometric view of a typi-cal unit entrance with mud room.

FIG 3.87 *[RIGHT]*

Floor plan callout of a typical unit entrance with mud room.



Health:

- If space permits, provide a rinse station at floor level with a shower head for a quick cleaning before entering the rest of the unit.

Texture & Materials:

- Flooring shall be hard surfaces that offer ease-of-cleaning such as (more info found in section E 3.4.5.1):
    - o Tiles
    - o Hardwood
    - o Concrete
    - o Vinyl

Durability & Maintenance:

- If this space is not a designated room, then a wall-recessed sliding gate is highly recommended to separate the entrance from the rest of the unit to contain any potential spreading of messes. Also, this gate is helpful to prevent your dog from running out the unit when opening the front door for packages or guests. [41]

38. USDA. 2022. 'Animal Care Tech Note: Minimum Space Requirements for Dogs'.
39. Horowitz, Alexandra. 2016. Inside of a Dog: What Dogs See, Smell, and Know. Young readers edition., First edtion. New York: Simon & Schuster Books for Young Readers.
40. Inspired by my visits to my vet clinic where they have dog hooks at the reception checkout desk.
41. Hoch, Rachel. 2024. 'Pocket Gate Design Plans'. Home Sweet Hoch. 2024. https://www.homesweethoch.com/products/pocket-gate-design-plans.

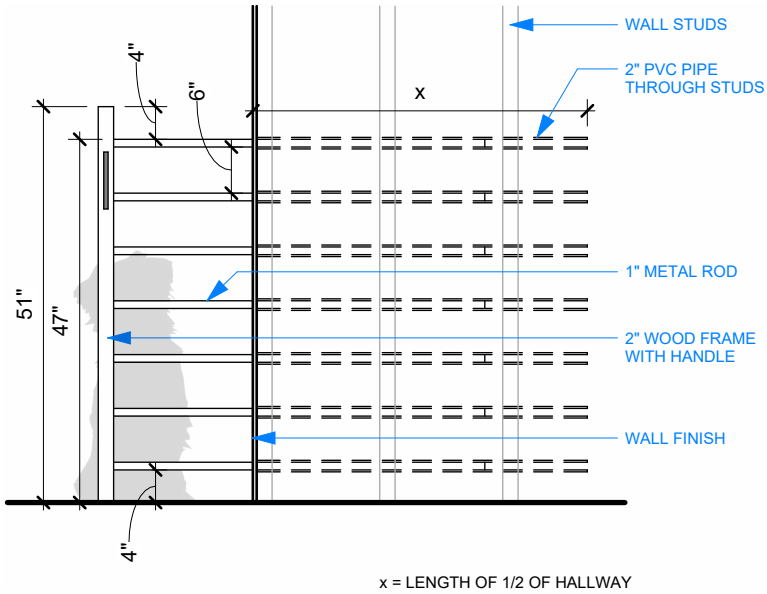


FIG 3.88 *[LEFT]*

Typical section elevation detail of wall-recessed sliding gate.

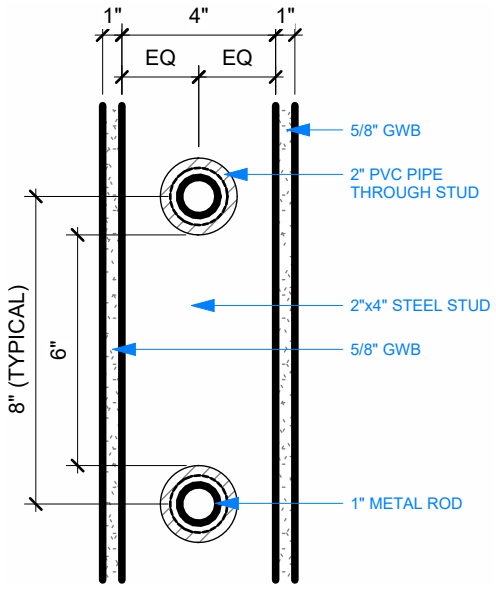


FIG 3.89 *[LEFT]*

Typical section detail of wall-recessed sliding gate between studs.

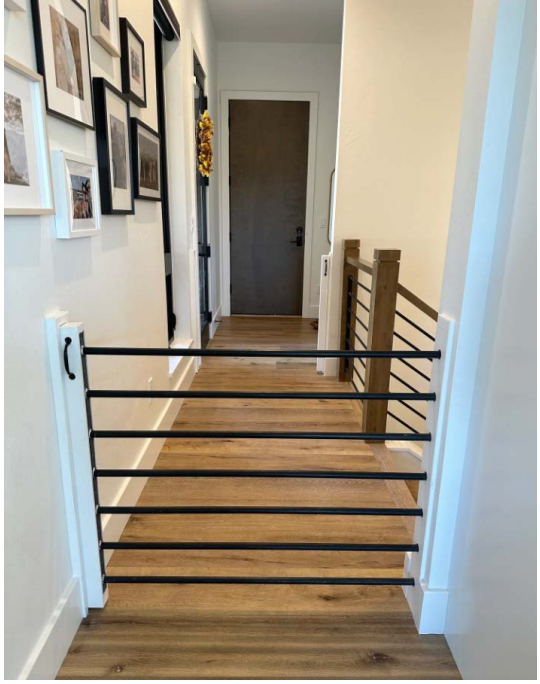




FIG 3.90 *[RIGHT - LEFT]*

Example of pocket dog gate.

FIG 3.91 *[RIGHT - RIGHT]*

Example of pocket dog gate between wall studs exposed before drywall finish is added.





FIG 3.92 *[RIGHT - LEFT]*

Example of dog hooks mounted to wall to temporarily tether a dog on a leash to free up your hands.

FIG 3.93 *[RIGHT - RIGHT]*

Example of dog hooks mounted to wall to temporarily tether a dog on a leash to free up your hands.



FIG 3.94 *[RIGHT]*

Example of a dog washing station on the floor.

C.3.3.2 | FOOD & WATER STATION

Design Standard:

Food and water stations shall be integrated in the kitchen area with the millwork and plumbing for convenience and efficiency.

Specification:

- Lowest Height for Food Bowl = 7 in (177.8 mm) [42]
- Tallest Height for Food Bowl = 32.5 in (825.5 mm) [43]
- Number of Req'd Levels for Food (min) = 3

Comfortability:

- Offer adjustable height placement for food and water bowls to accommodate different sized dogs.
- Provide storage adjacent in millwork for food bag and supplies.

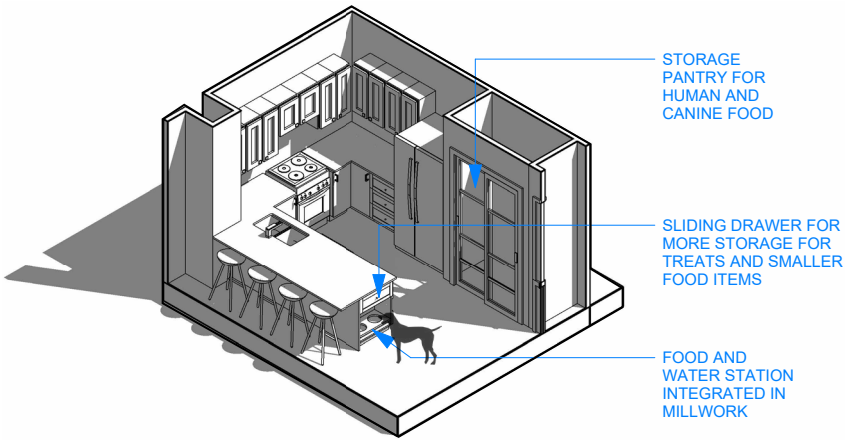
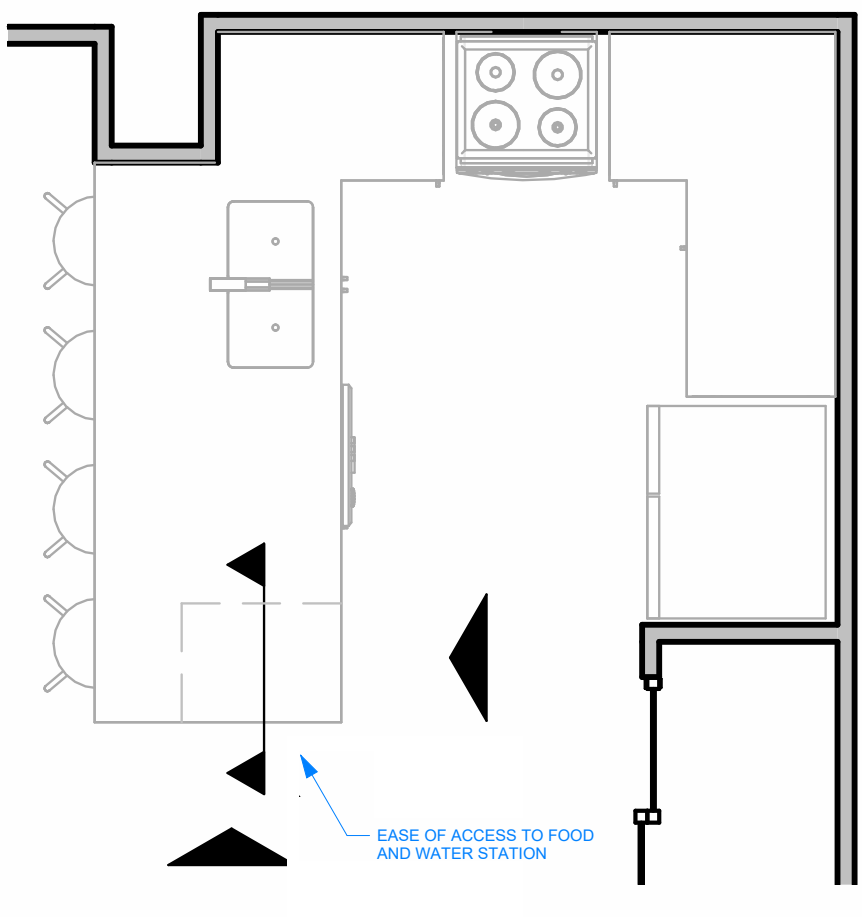


FIG 3.95 *[LEFT]*

Axonometric view of a typical unit kitchen with an integrated canine food and water station in the millwork.

FIG 3.96 *[RIGHT]*

Floor plan callout of a typical unit kitchen with an integrated canine food and water station in the millwork.



Health:

- Provide a faucet connected to cold and hot water plumbing over water bowls to allow for easy refills for daily fresh water. (44)

Texture & Materials:

- Flooring shall be hard surfaces that offer ease-of-cleaning such as (more info found in section E 3.4.5.1):
    - o Tiles
    - o Hardwood
    - o Concrete
    - o Vinyl

42. I took the shortest height dog in the AKC database (Chihuahua) as a point of reference.
43. I took the average of the 6 largest breeds registered under the AKC to account for the "worst case scenario"
44. Bekoff, Marc, and Jessica Pierce. 2019. Unleashing Your Dog: A Field Guide to Giving Your Canine Companion the Best Life Possible. Illustrated edition. Novato, California: New World Library.

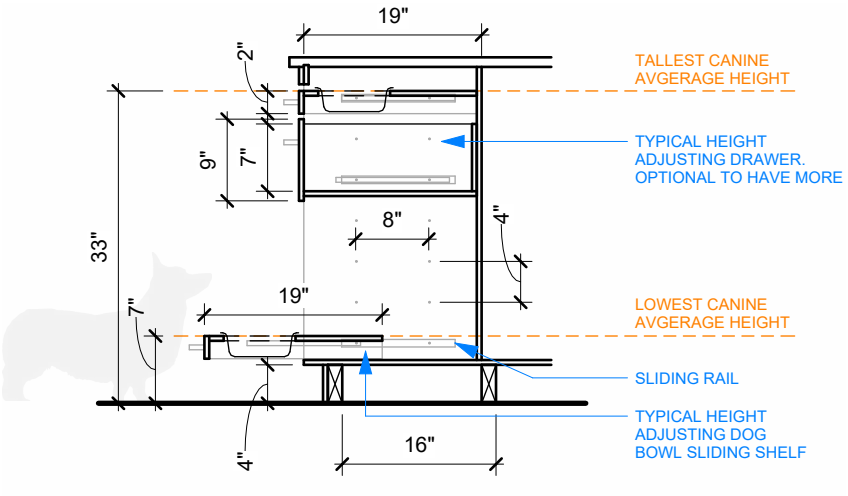


FIG 3.97 *[LEFT]*

Typical section of the inte-grated canine food and water station, showing the modularity and height ad-justability for dogs of dif-ferent sizes.

FIG 3.98 *[BELOW]*

Typical elevations of the integrated canine food and water station, showing the fresh water spout on the side.

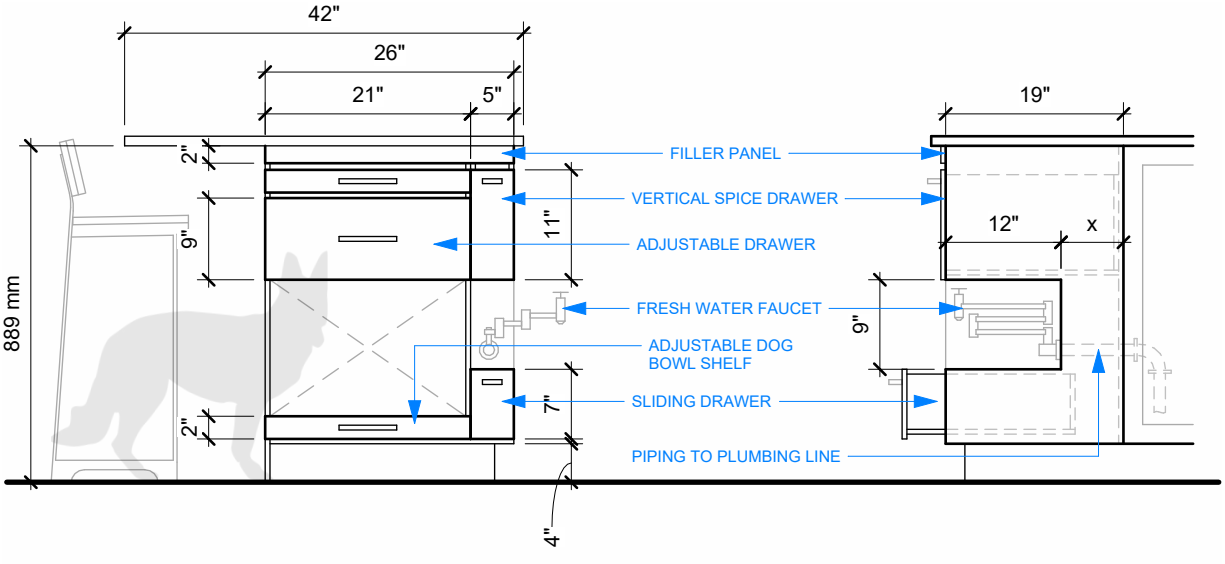




FIG 3.99 *[RIGHT]*

Example of dog food and water station with sliding drawer feature.



FIG 3.100 *[RIGHT]*

Example of dog food and water station with water faucet integrated in millwork counter.

C.3.3.3 | CANINE LOUNGING
C.3.3.3.1 | SAFE ZONE

Design Standard:

Provide a "crate" space for your dog to retreat for rest, sleep, and safety. Like everyone in the family, our canine companions deserve their own room too.

Specification:

- Req'd Size Area (min) = 18.96 ft^2 (1.76 m^2) [45]
- Req'd Height (min) = 4.49 ft (1.37 m) [45]
- Req'd STC (Sound Transmission Class) Rating (min) = 50 to 65 (For example: IsoTrax Sound Isolation Systems) [46]

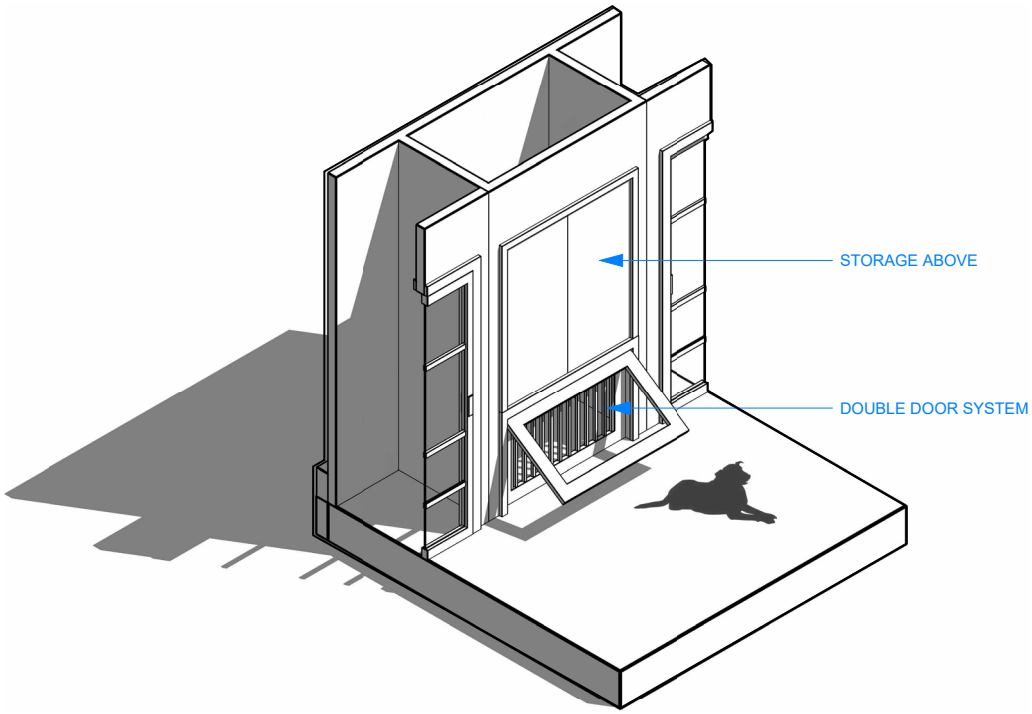


FIG 3.101 *[LEFT]*

Axonometric view of a typical canine crate integrated and recessed in the wall with storage above.

Comfortability:

- Consider have a dog bed inside either as custom millwork or store-bought furniture. [47]
- Space to have proper ventilation if sealed by door.
- Locate this space away from the exterior wall.
- Door shall be swinging, however if a sliding door is implemented, no vertical sliding is permitted.

Texture & Materials:

- Comfortable bedding material for sleeping area.
- Cold and hard surfaces that offer ease-of-cleaning such as (more info found in section E 3.4.5.1): [48]
    - o Tiles
    - o Hardwood
    - o Concrete
    - o Vinyl

Acoustics:

- Walls to be acoustically treated from the rest of the unit. Consider vibration mitigation.

45. USDA. 2022. 'Animal Care Tech Note: Minimum Space Requirements for Dogs'.
46. 'Dog Kennel & Daycare Soundproofing'. n.d. Soundproof Cow. Accessed 3 May 2024. https://www.soundproofcow.com/soundproof-a-space-restaurant-office/dog-kennel-soundproofing/.
47. Hofmann, Michelle. n.d. 'These Homeowners Are Creating Unique Spaces For Their Pets'. Forbes. Accessed 3 May 2024. https://www.forbes.com/sites/michellehofmann/2021/12/06/not-your-average-dog-house/.
48. Horowitz, Alexandra. 2016. Inside of a Dog: What Dogs See, Smell, and Know. Young readers edition., First edtion. New York: Simon & Schuster Books for Young Readers.

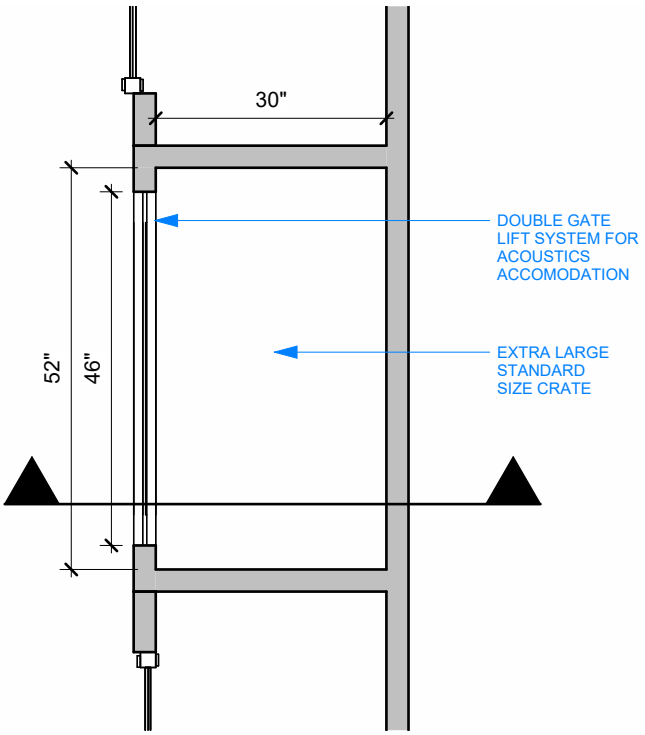


FIG 3.102 *[LEFT]*

Floor plan callout of a typical canine crate integrated and recessed in the wall.

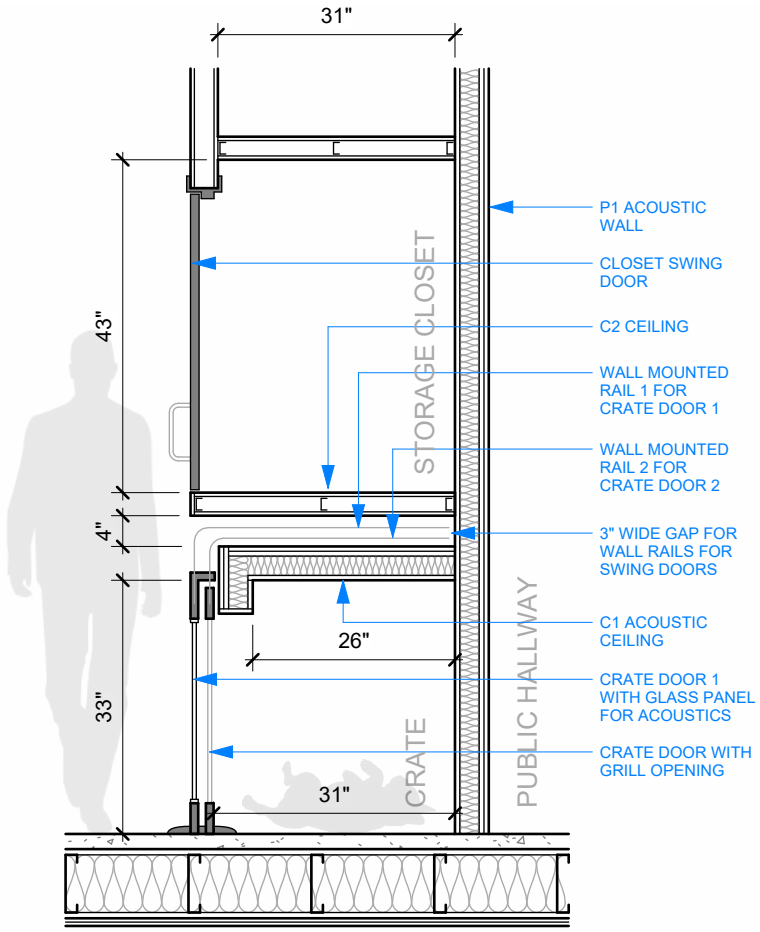


FIG 3.103 *[LEFT]*

Typical wall section of a canine crate integrated and recessed in the wall with storage above.



FIG 3.104 *[RIGHT]*

Example of dog bed under stairs case open to the foyer.

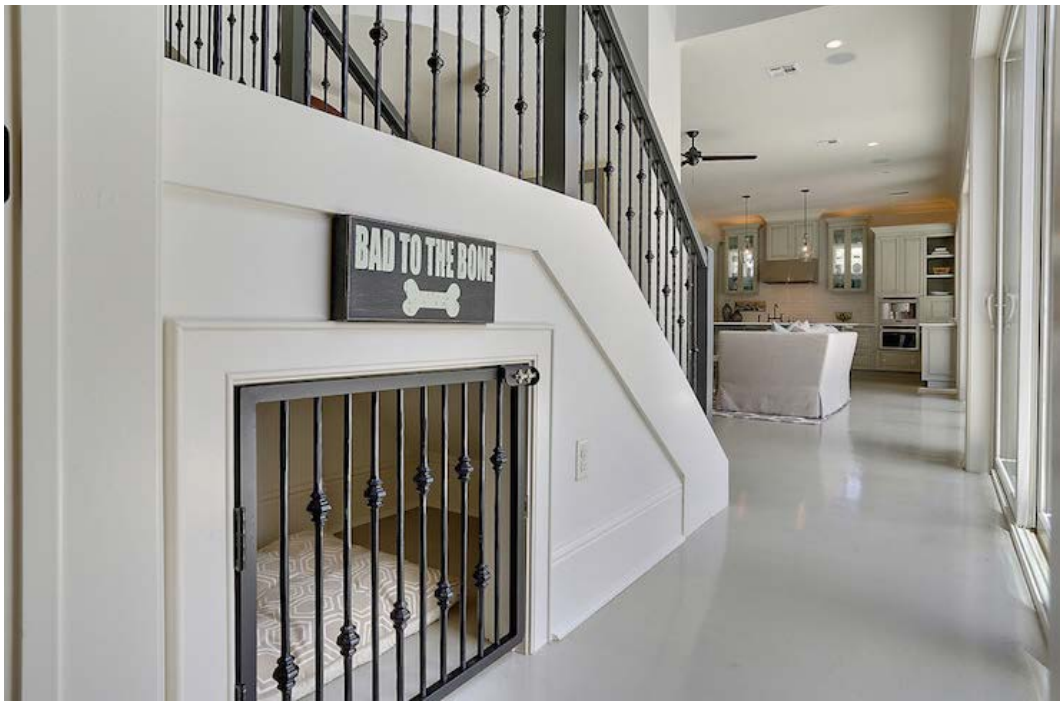


FIG 3.105 *[RIGHT]*

Example of dog bed crate under the staircase with a vertical swinging grate door.



FIG 3.106 *[RIGHT]*

Example of dog bed with swinging doors in laundry room with storage above.

C.3.3.3 | CANINE LOUNGING

C.3.3.3.2 | WINDOW SILL SEATING LEDGE

Design Standard:

All windows on exterior walls that are not floor-to-ceiling height shall have integrated canine seating along the sill.

Specification:

- Seating Ledge Depth (min) = 18 in (457.2 mm) [49]

Comfortability:

- Elegant solution to allow dogs to lounge and keep a visual connection outdoors while keeping them off furniture or climbing on the walls.
- Implement a ramp or canine-accessible steps to safely access the ledge as per section C 3.3.5.1 details.

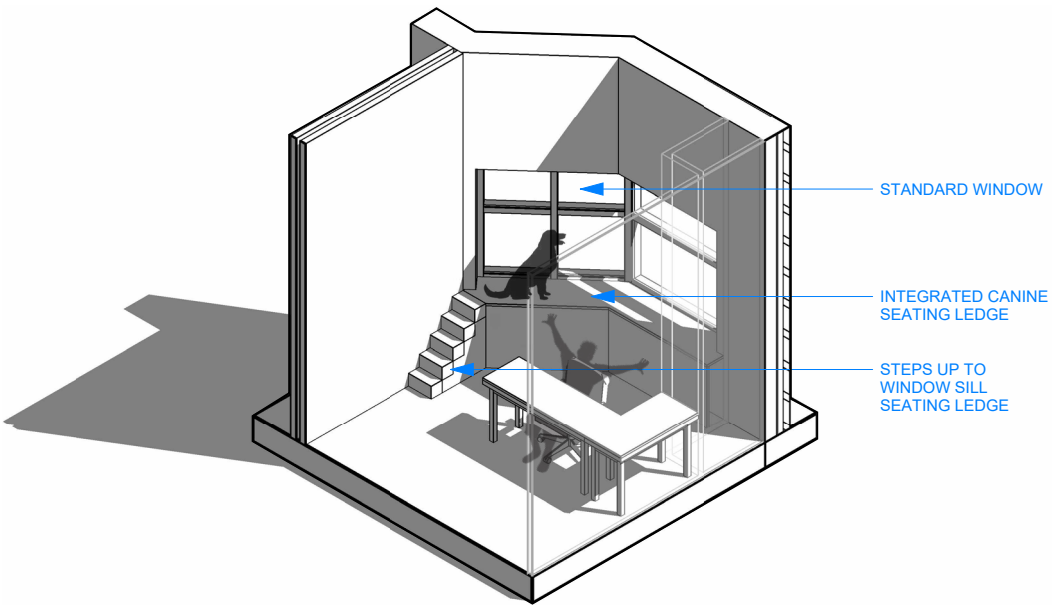
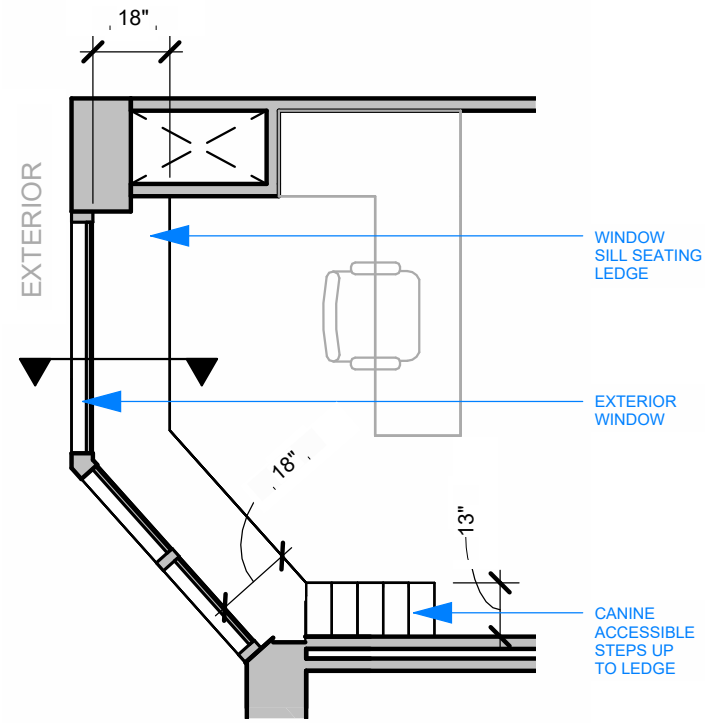


FIG 3.107 *[LEFT]*

Axonometric view of a typical seating ledge integrated with the windowsill.

FIG 3.108 *[RIGHT]*

Floor plan callout of a typical seating ledge integrated with the windowsill.



Health:

- Giving dogs the option to stare outside and observe nature or people is a great form of "environmental enrichment" to help stimulate their minds when left alone at home. [50]

Texture & Materials:

- Sill seating surface shall be easy to maintain and not heat conducting to maximize comfort, such as wood.

Durability & Maintenance:

- Sill to be scratch-proof.
- Design to allow modularity and removal of surface for easy replacement of surface when necessary.

Acoustics:

- It is highly encouraged to have all STC ratings for exterior windows match the STC value of the wall assembly.

49. Inspired by standard seating chair depth and similar depth as enrichment path in Section A 3.2.5.2.
50. 'Environmental Enrichment | Indoor Pet Initiative'. n.d. Accessed 3 May 2024. https://indoorpet.osu.edu/dogs/environmental_enrichment_dogs.

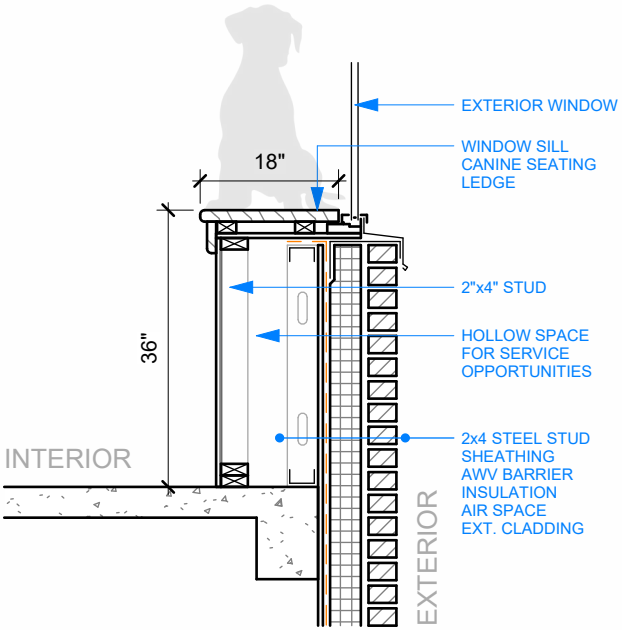


FIG 3.109 *[LEFT]*

Typical section of a canine seating ledge along the windowsill.

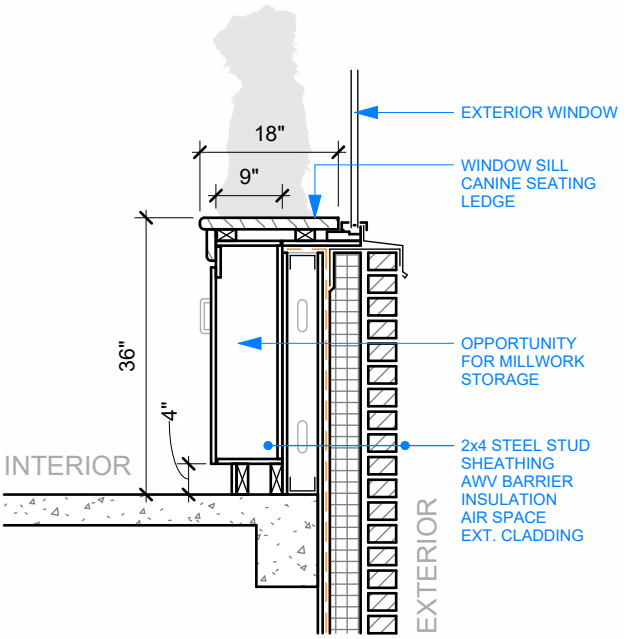


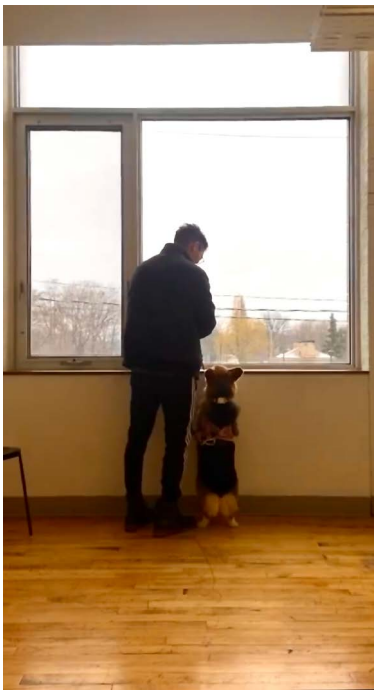
FIG 3.110 *[LEFT]*

Typical section of a canine seating ledge along the windowsill with storage underneath it.



FIG 3.111 *[RIGHT]*

Example of a dog longing to see outside but has no means but to prop itself up, possibly resulting in unintentional damage to the window sill.



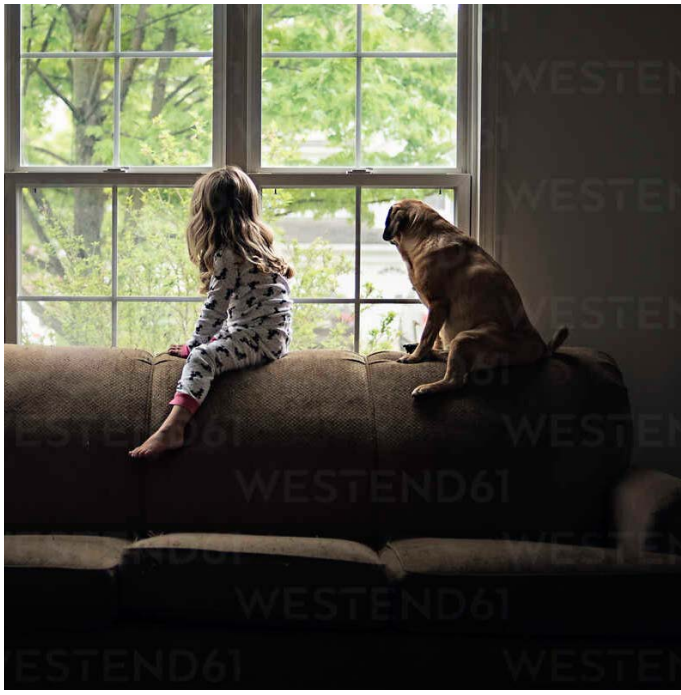


FIG 3.112 *[RIGHT - LEFT]*

Photo of Truffles trying to see outdoors by can't. As a short dog, this moment inspired the thought process behind canine-inclusive architecture.

FIG 3.113 *[RIGHT - RIGHT]*

Example of typical situation where dogs have to climb up on furniture to see outside.



FIG 3.114 *[RIGHT]*

Example of homeowners DIYing stairs and ledges for their dogs to climb up on to watch outside.

C.3.3.4 | SELF ACCESSIBLE BALCONY

Design Standard:

A canine-accessible balcony shall be provided to allow freedom to go outside and inside if left home alone.

Specification:

- Balcony Size (min) = 75.84 ft^2 (7.0 m^2) [51]
- Double Skin Façade Width (min) = 2.5 ft (762 mm) [52]

Comfortability:

- Assure that interior comfort is not compromised during seasons.
    - o Adequate insulation requirements as per local building codes.
    - o Utilize insulating doggy doors in double skin façade system. [53]

FIG 3.115 *[BELOW]*

Axonometric view of an innovative double skin façade system that gives agency to dogs to enter and exit the balcony.

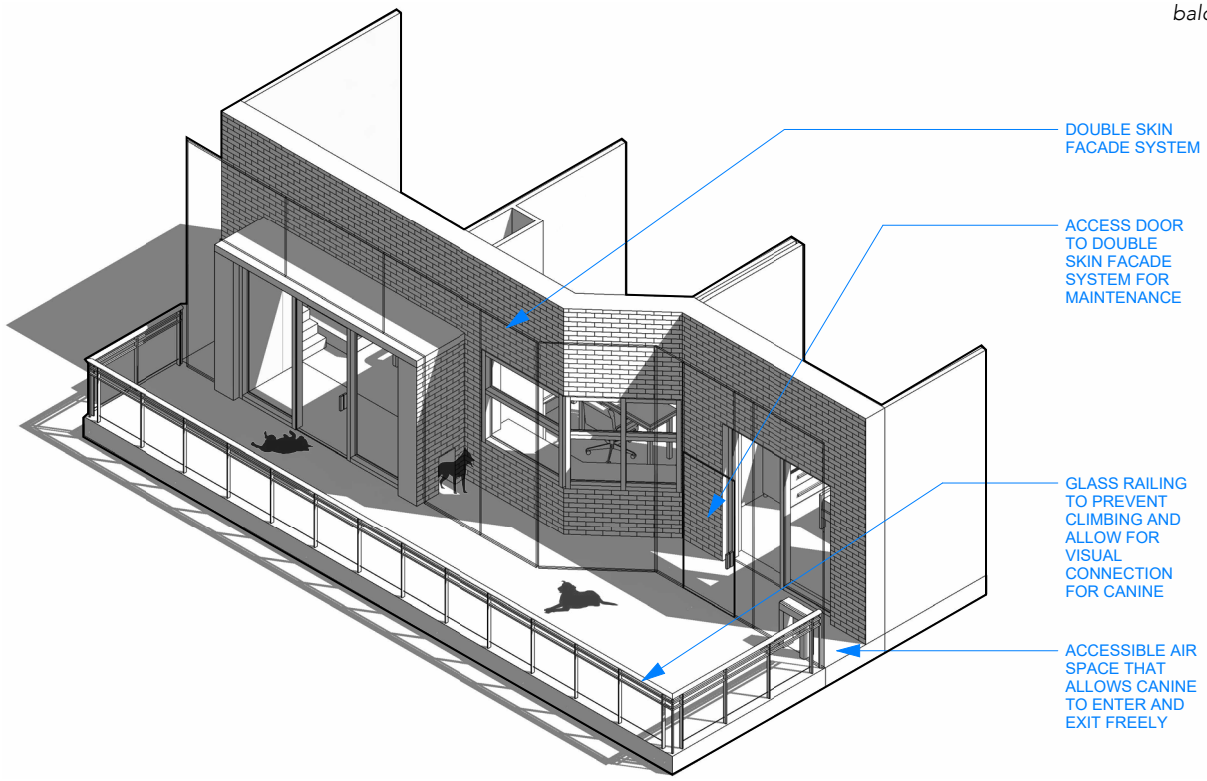
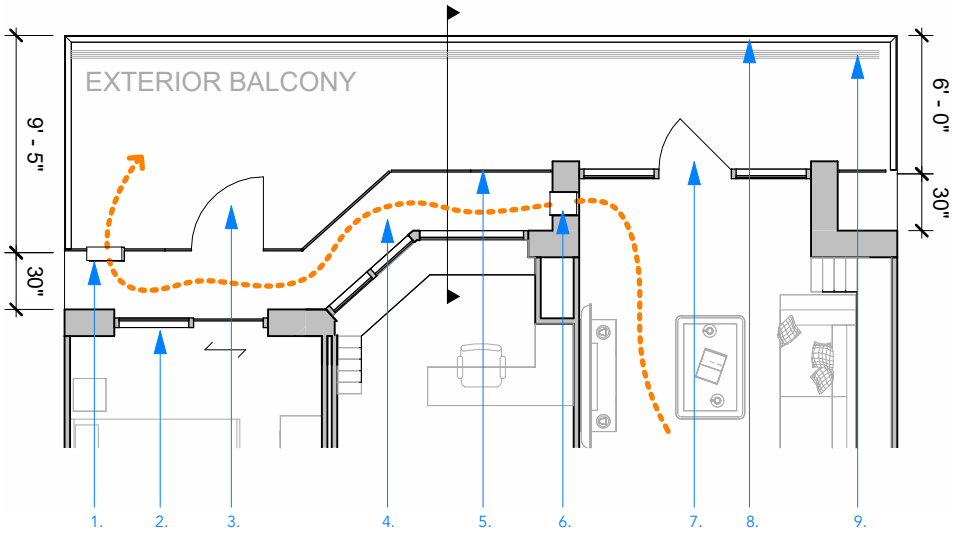


FIG 3.116 *[RIGHT]*

Floor plan callout of an innovative double skin façade system that gives agency to dogs to enter and exit the balcony.



1. DOG DOOR #2
2. GLASS SLIDING DOOR
3. ACCESS DOOR IN DOUBLE SKIN FACADE SYSTEM
4. ACCESSIBLE AIR SPACE
5. DOUBLE SKIN FACADE
6. INSULATED DOGGY DOOR #1
7. MAIN BALCONY ACCESS FROM LIVING ROOM
8. PET SAFE RAILING
9. 4" DRAINAGE GUTTER FOR REGULAR BALCONY CLEANING

Health:

- Freedom for the dog to enter and exit the balcony on their own allows them to get fresh air whenever they desire and benefits them mentally when they can make their own choices. (54)
- A portion of the balcony shall be dedicated as a relief space.

Texture & Materials:

- Flooring shall be hard surfaces that offer ease-of-cleaning such as (more info found in section E 3.4.5.1):
    - o Tiles
    - o Concrete
    - o Vinyl
- Encouraged to use glass panel railings to keep visual connections and minimize openings that smaller dogs can get through.
- Avoid horizontal members on railings that can encourage climbing.

Durability & Maintenance:

- All balconies to have proper drainage to allow users to regularly clean and rinse the space.
- All balconies to have hose-bib connections for regular cleaning.
- If double skin façade system is implemented, the double skin area must be accessible by human for safety and maintenance. (52)

51. USDA. 2022. 'Animal Care Tech Note: Minimum Space Requirements for Dogs'. (Area/Large Dog for Exercise) x2 + (Area/Large Dog for Relief) x2
52. Anderson, Collin. 2023. 'Detail: CLT Structure of the Sara Cultural Centre, Skellefteå'. Archello. 2023. https://archello.com/news/detail-clt-structure-of-the-sara-cultural-centre-skellefteå.
53. Dockery, Nicholas. 2019. 'The Best Insulated Dog Doors for Cold Weather'. PetDoors.Com. 14 October 2019. https://www.petdoors.com/en-ca/blogs/dog/best-winter-dog-doors.
54. Bekoff, Marc, and Jessica Pierce. 2019. Unleashing Your Dog: A Field Guide to Giving Your Canine Companion the Best Life Possible. Illustrated edition. Novato, California: New World Library.

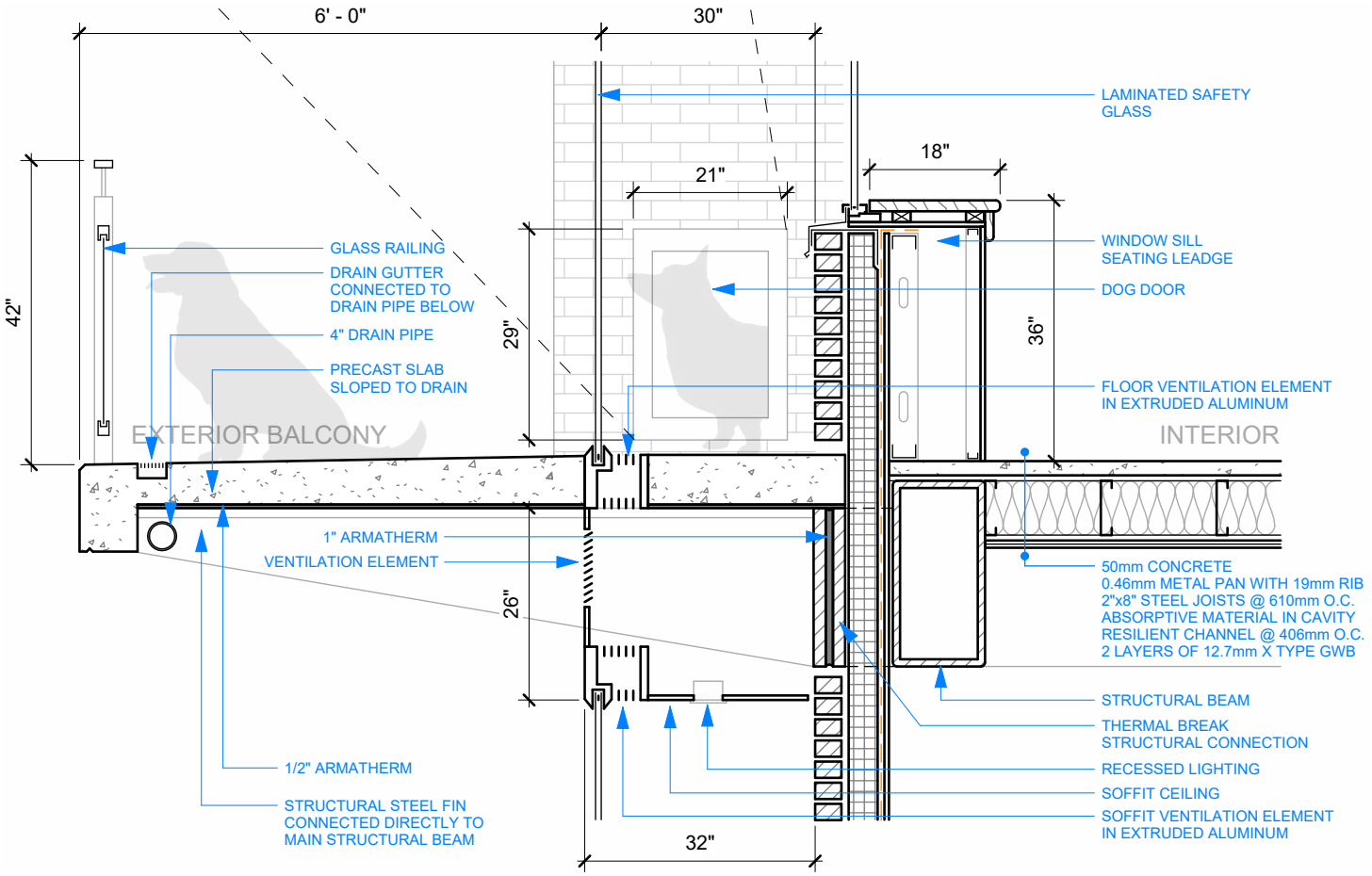


FIG 3.117 *[LEFT]*

Example of the Endura Flap doggy door that insulated for harsh cold climates.

FIG 3.118 *[BELOW]*

Section detail of the double skin faced system and thermally broken balcony.



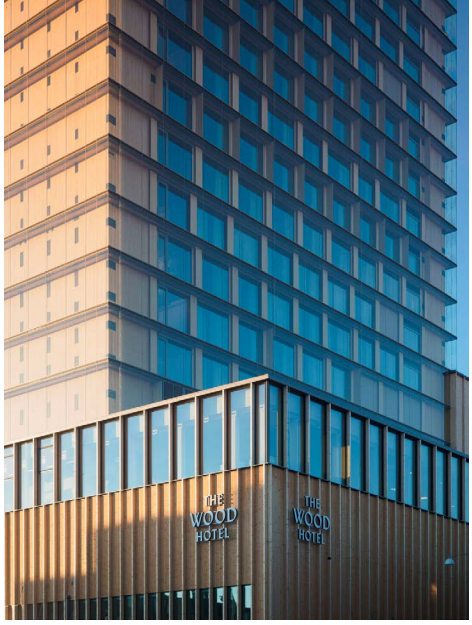




FIG 3.119 *[RIGHT - LEFT]*

Example of exterior view of double skin façade on Sara Kulturhus center by White Arkitekter.

FIG 3.120 *[RIGHT - RIGHT]*

Example of interior view of the accessible double skin façade on Sara Kulturhus center by White Arkitekter.



FIG 3.121 *[RIGHT]*

Example of owners DIYing puppy garden spaces on their balconies.



FIG 3.122 *[RIGHT]*

Example of owners having a relief area on their balconies.

C.3.3.5 | PLAY & ENRICHMENT
C.3.3.5.1 | EXPAND INTERIOR CIRCULATION

Design Standard:

It is highly recommended to implement "enrichment paths" around the unit to allow and encourage more canine movement and reduce dead ends.

Specification:

- Canine Stair Riser height (max) more than 3 steps = 5.5 in (139.7 mm)[55]
- Canine Stairs Tread depth (max) more than 3 steps = 7.5 in (190.5 mm) [55]
- Canine Stairs Riser height (max) no more than 3 steps = municipal stair codes [56]
- Canine Stairs Tread depth (max) no more than 3 steps = municipal stair codes [56]
- Enrichment Path Width (min) = 1.5 ft (457.2 mm)[57]
- Enrichment Path Height (min) = 27 in (685.8 mm)[58]

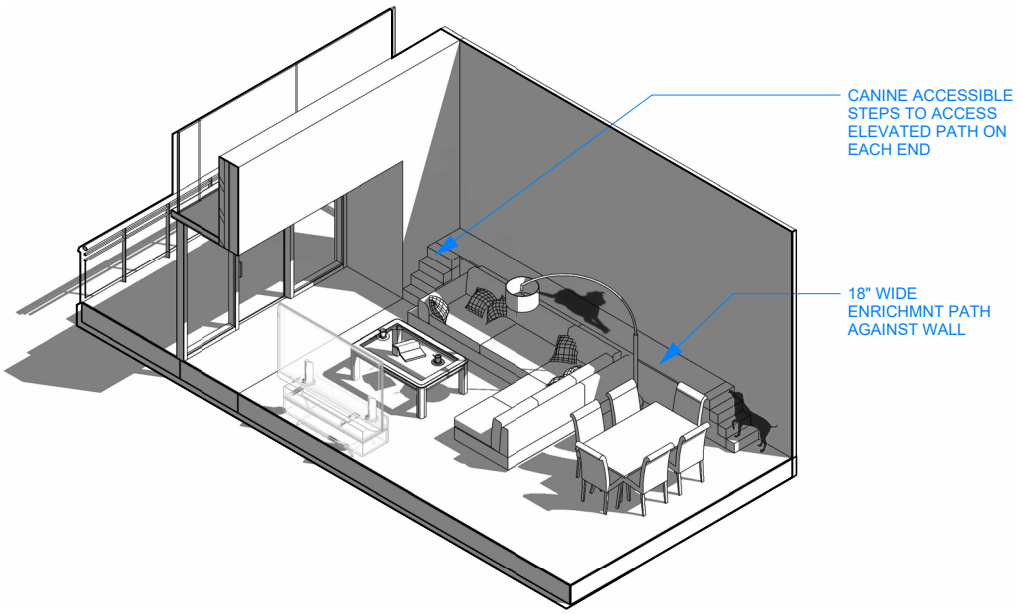
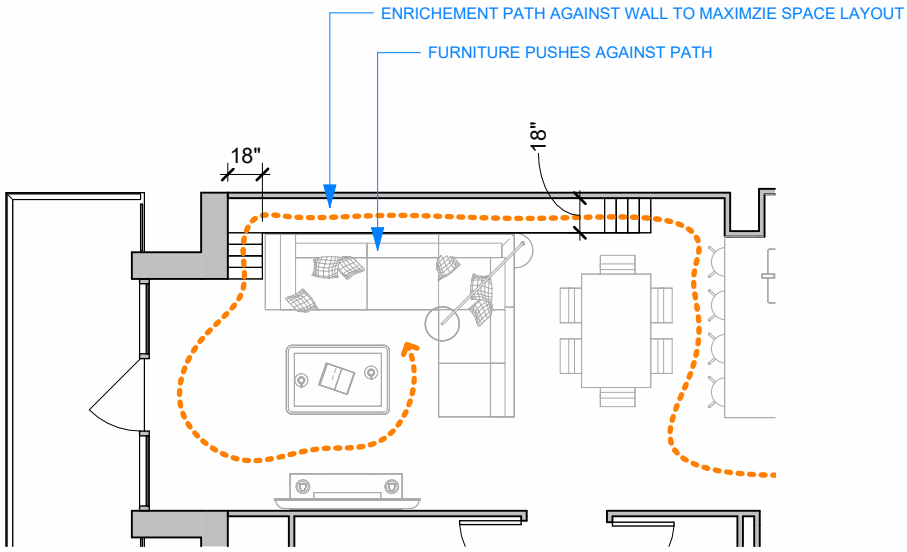


FIG 3.123 *[LEFT]*

Axonometric view of typical living room space with an enrichment path implemented against the wall behind the couch.

FIG 3.124 *[RIGHT]*

Floor plan callout of a typical living room space with an enrichment path implemented against the wall behind the couch.



Comfortability:

- Also provides more opportunities for lounging at higher levels as an alternative to furniture.

Health:

- Increasing mobility encourages more free movement for dogs, which can lead to better health and minimize anxiety build-up.

Texture & Materials:

- Flooring shall be hard surfaces that offer ease-of-cleaning such as (more info found in section E 3.4.5.1):
    - o Tiles
    - o Concrete
    - o Vinyl

55. Inspired by existing canine stair furniture I have.
56. Inspired by the Ontario Building Code
57. Inspired by standard seating chair depth and similar depth as enrichment path in Section A 3.2.5.2.
58. Inspired by average couch back rest heigh.

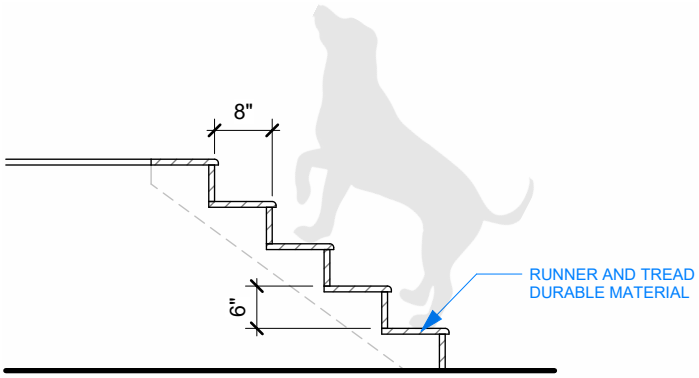


FIG 3.125 *[LEFT]*

Typical section elevation detail of the canine accessible stairs for the enrichment path.

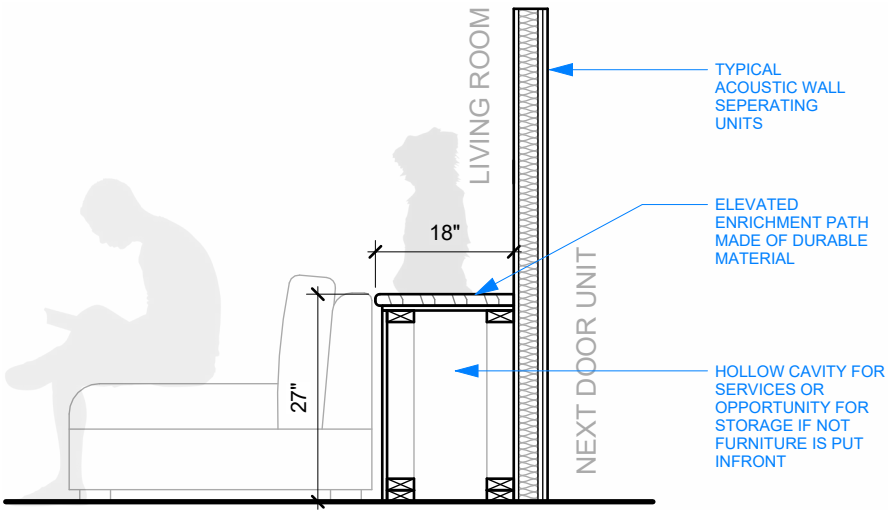


FIG 3.126 *[LEFT]*

Typical section detail of the enrichment path behind the couch.

FIG 3.127 *[RIGHT]*

Example of expanded circulation for cats around the house by implementing platforms on walls.



FIG 3.128 *[RIGHT]*

Example of expanded circulation for cats around the house by implementing platforms on walls.



C.3.3.5 | PLAY & ENRICHMENT

C.3.3.5.2 | PLAY AREAS

Design Standard:

Play areas are important to consider for each unit, therefore long linear paths are essential for maximizing effective play areas for dogs in a confined space.

Specification:

- Play Area Length (min) = 24 ft (7.32 m) [59]
- Play Area Width (min) = 2.5 ft (762 mm) [59]
- Play Area (min) = 37.95 ft^2 (3.53 m^2) [60]

Comfortability:

- Long stretches of area is ideal for some indoor fetch playing with toys for small to middle sized dogs.

Health:

- Providing opportunities to personal playtime is crucial to overall canine well-being in addition to social play sessions in public OLAs.
- These open areas in the unit can also be optimal for training space at home.

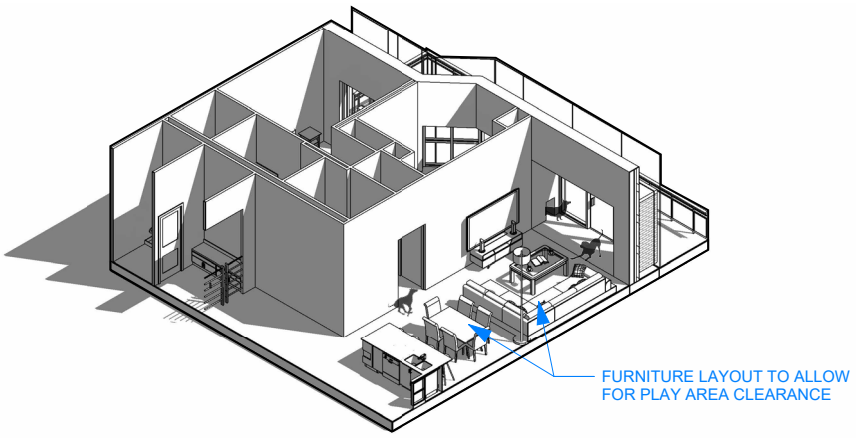
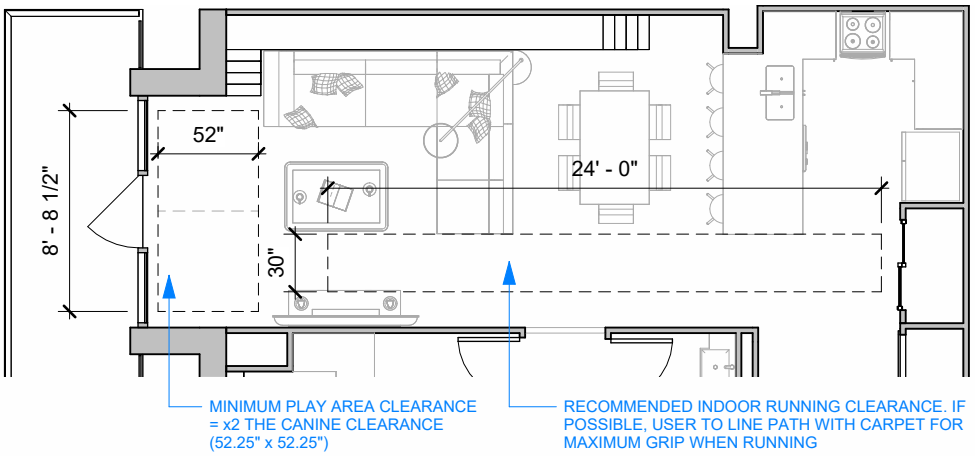


FIG 3.129 *[LEFT]*

Axonometric view of typical living room space with a linear play space as a result of the furniture layout.

FIG 3.130 *[RIGHT]*

Floor plan callout of a typi-cal living room space with a linear play space as a result of the furniture layout.



Texture & Materials:

- Anti-slip materials are encouraged for play areas (more info found in section E 3.4.5.1):
    - o Carpet Tiles
    - o Roll over carpets

Durability & Maintenance:

- Carpet Tiles are an excellent solution to provide comfort in running and ease-of-maintenance if certain areas need to be replaced from damage.

Acoustics:

- Strategic layout of the unit to utilize BOH programmatic spaces (i.e. storage, mud room, washrooms, etc.) near the entrance as additional acoustical barriers between the unit and hallway can be executed.

59. Inspired by my personal condominium unit case study analysis
60. USDA. 2022. 'Animal Care Tech Note: Minimum Space Requirements for Dogs'.

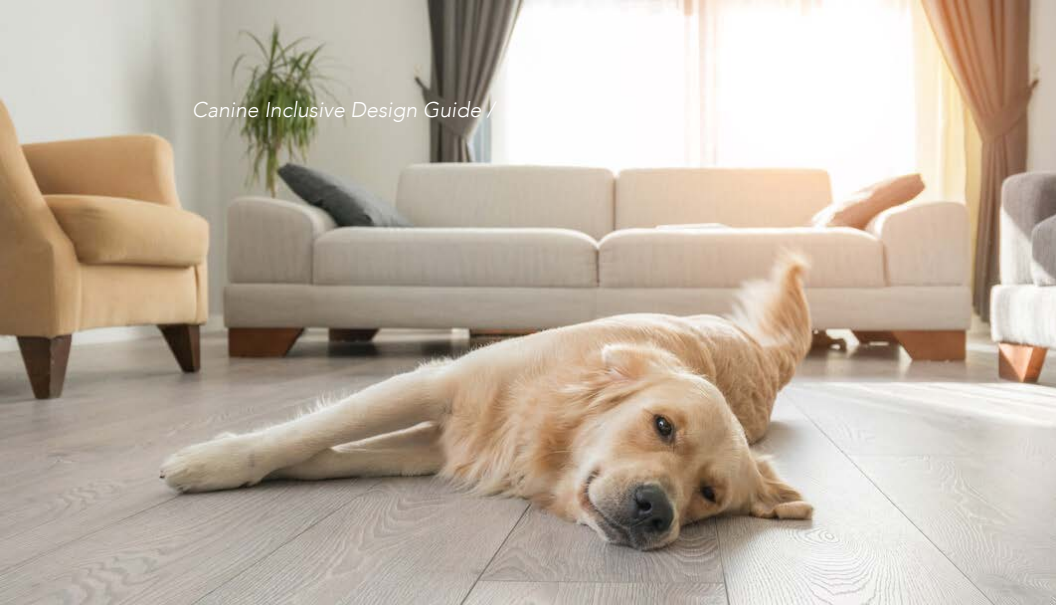


FIG 3.131 *[LEFT]*

Example of dog playing on living room floor.



FIG 3.132 *[LEFT]*

Example of dog playing fetch indoors on rolled out rug for maximizing grip.



FIG 3.133 *[LEFT]*

Example of training session happening in living room due to wide open space for dog.

FIG 3.134 *[RIGHT - FACING]*

PPicture of Truffles as a puppy, sleeping on her favourite carpet.



C.3.3.6 | STORAGE

Design Standard:

Adequate storage is to be provided throughout the unit to put things away that could be mistaken as a chew toy and discourage any undesired messes.

Specification:

- Storage is required for:
    - o Shoes
    - o Coats
    - o Dog Food/Treats
    - o Dog Toys
    - o Dog accessories (i.e. collars, leash, poop bags, wipes, etc.)
- It is encouraged to have garbage bins with lids to prevent dogs from accessing the contents within. [61]

Comfortability:

- Consider storage solutions
    - o Custom millwork or
    - o Store-bought furniture.

61. Horowitz, Alexandra. 2016. Inside of a Dog: What Dogs See, Smell, and Know. Young readers edition., First edtion. New York: Simon & Schuster Books for Young Readers.



FIG 3.135 *[ABOVE]*

Typical floor plan of condominium unit, highlighting all the storage opportunities.

3.4 | OVERALL BULDING GUIDES

This section provides additional information that supports the whole design guide, regarding typical wall, ceiling and floor assemblies, canine-friendly winter conditions, material data for interior and exterior conditions, and landscaping considerations.

SECTION A :
AT GRADE

SECTION B:
ABOVE GRADE

SECTION C:
UNIT SCALE

**SECTION D:
ASSEMBLY SCHEDULES**

**SECTION E:
OVERALL SUPPORT INFO**



SECTION D:
ASSEMBLY SCHEDULES

D.3.4.1 | WALL PARTITION ASSEMBLIES

Design Standard:

It's important to remember that every design will be different, especially when considering the different locations with different code requirements and environmental conditions. Therefore, these partition assemblies are suggestions and starting points to reference.

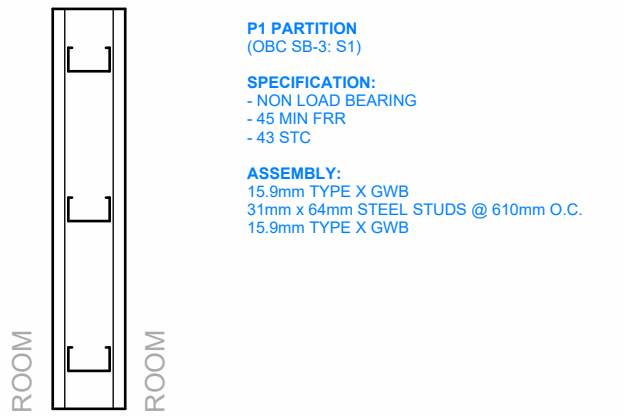
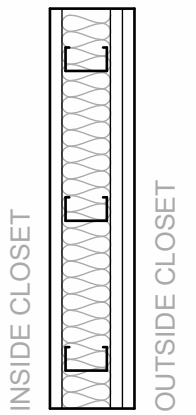


FIG 3.136 *[LEFT]*

Typical wall partition P1 for interior walls within the unit.

FIG 3.137 *[RIGHT]*

Typical wall partition P2 for acoustically separated rooms within the unit.



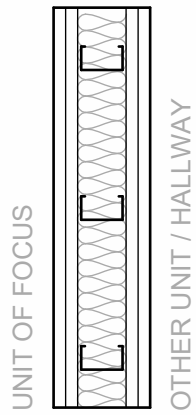
P2 PARTITION
(OBC SB-3: S2a)

SPECIFICATION:
- NON LOAD BEARING
- 1 HOUR FRR
- 50 STC

ASSEMBLY:
15.9mm TYPE X GWB
31mm x 64mm STEEL STUDS @ 610mm O.C.
65mm THICK ABSOPTIVE MATERIAL IN CAVITY
15.9mm TYPE X GWB
15.9mm TYPE X GWB

FIG 3.138 *[RIGHT]*

Typical wall partition P3 for acoustically separating units from other units/public hallways.



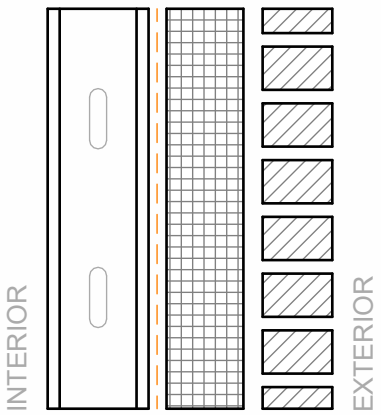
P3 PARTITION
(OBC SB-3: S3a)

SPECIFICATION:
- NON LOAD BEARING
- 2 HOUR FRR
- 54 STC

ASSEMBLY:
15.9mm TYPE X GWB
15.9mm TYPE X GWB
31mm x 64mm STEEL STUDS @ 610mm O.C.
65mm THICK ABSOPTIVE MATERIAL IN CAVITY
15.9mm TYPE X GWB
15.9mm TYPE X GWB

FIG 3.139 *[RIGHT]*

Typical wall partitions P4 for exterior assemblies.



P4 PARTITION

SPECIFICATION:
- FRR (ACCORDING TO CODE REQUIREMENTS)
- 50 - 60 STC (RECOMMENDED)

ASSEMBLY:
15.9mm GWB
31mm x 101.6mm STEEL STUDS @ 610mm O.C.
15.9mm GWB
AIR/WATER/VAPOR (AWV) BARRIER
EXT. RIGID INSULATION (ACCORDING TO CODE REQUIREMENTS)
25.4mm AIR SPACE
EXT. CLADDING

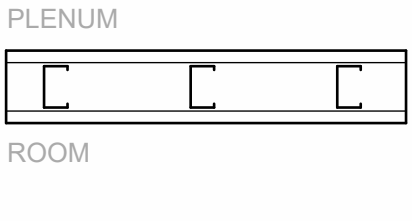
D.3.4.2 | CEILING ASSEMBLIES

Design Standard:

It's important to remember that every design will be different, especially when considering the different locations with different code requirements. Therefore, these ceiling assemblies are suggestions and starting points to reference.

FIG 3.140 *[LEFT]*

Typical ceiling assembly C1 for standard rooms that don't require acoustic separations.



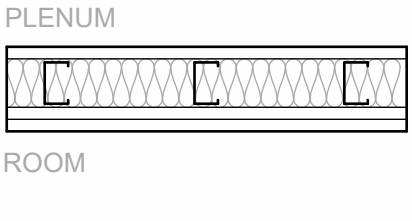
C1 CEILING

SPECIFICATION:
- 45 MIN FRR

ASSEMBLY:
15.9mm TYPE X GWB
31mm x 64mm STEEL STUDS @ 610mm O.C.
15.9mm TYPE X GWB

FIG 3.141 *[LEFT]*

Typical ceiling assembly C2 for standard rooms that do require acoustic separations.



C1 CEILING
(OBC SB-3: S2a HORIZONTAL)

SPECIFICATION:
- NON LOAD BEARING
- 1 HOUR FRR
- 50 STC

ASSEMBLY:
15.9mm TYPE X GWB
31mm x 64mm STEEL STUDS @ 610mm O.C.
65mm THICK ABSOPTIVE MATERIAL IN CAVITY
15.9mm TYPE X GWB
15.9mm TYPE X GWB

D.3.4.3 | FLOORING ASSEMBLIES

Design Standard:

It's important to remember that every design will be different, especially when considering the different locations with different code requirements. Therefore, these floor assemblies are suggestions and starting points to reference.

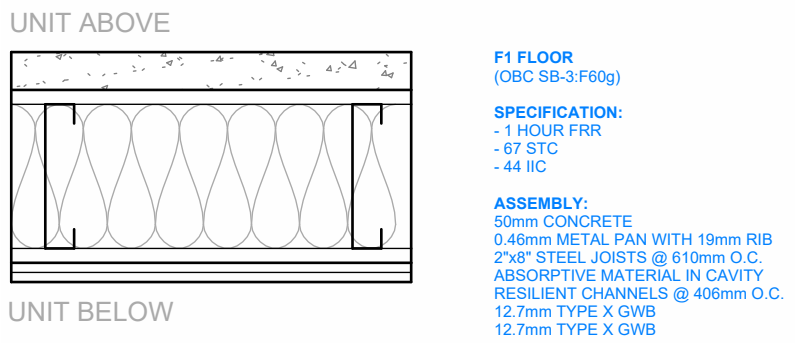


FIG 3.142 *[LEFT]*

Typical floor assembly F1 for residential condo units.

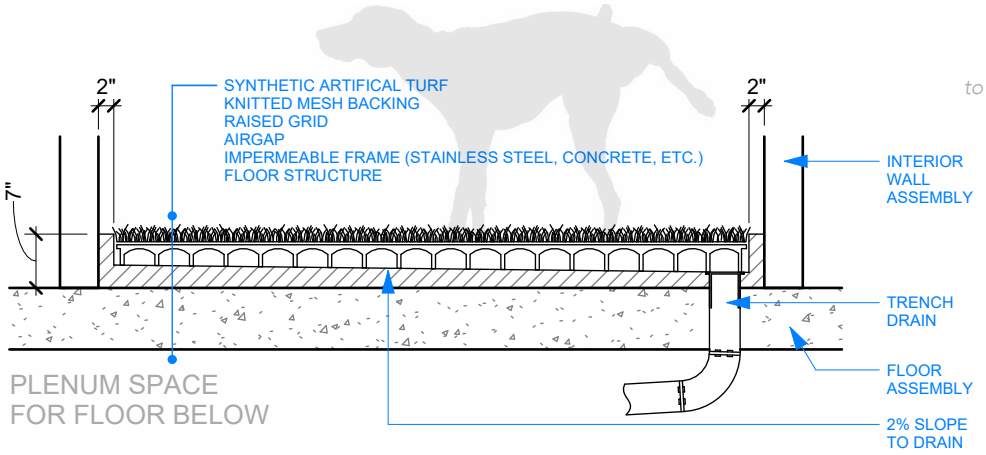


FIG 3.72 *[LEFT]*

Typical section detail of an interior pet relief area. Refer to section B.3.2.6 (page 85) for more information.

FIG 3.32 *[RIGHT]*

Section detail of typical pet relief floor assembly with synthetic turf over aggregate. Refer to section A.3.2.3. (page 61) for more information.

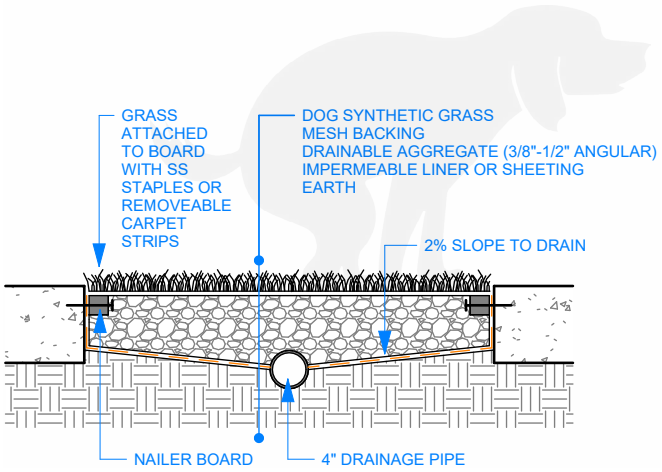
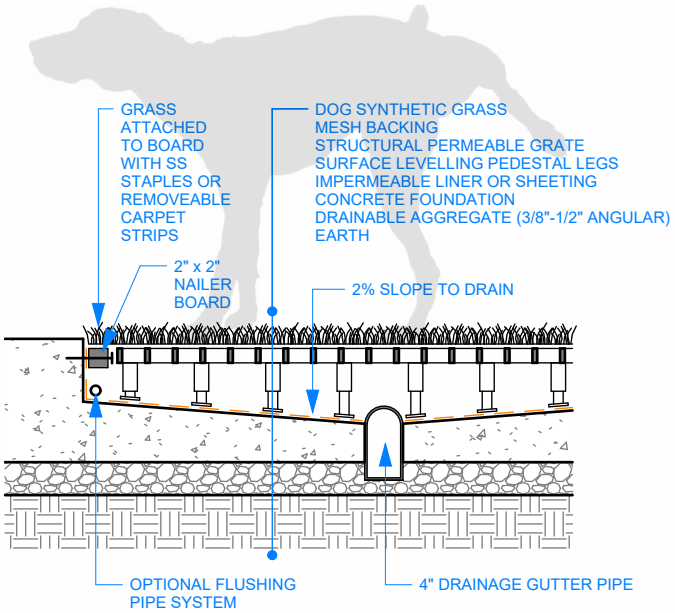


FIG 3.33 *[RIGHT]*

Section detail of typical pet relief floor assembly with synthetic turf over pedestals. Refer to section A.3.2.3. (page 61) for more information.



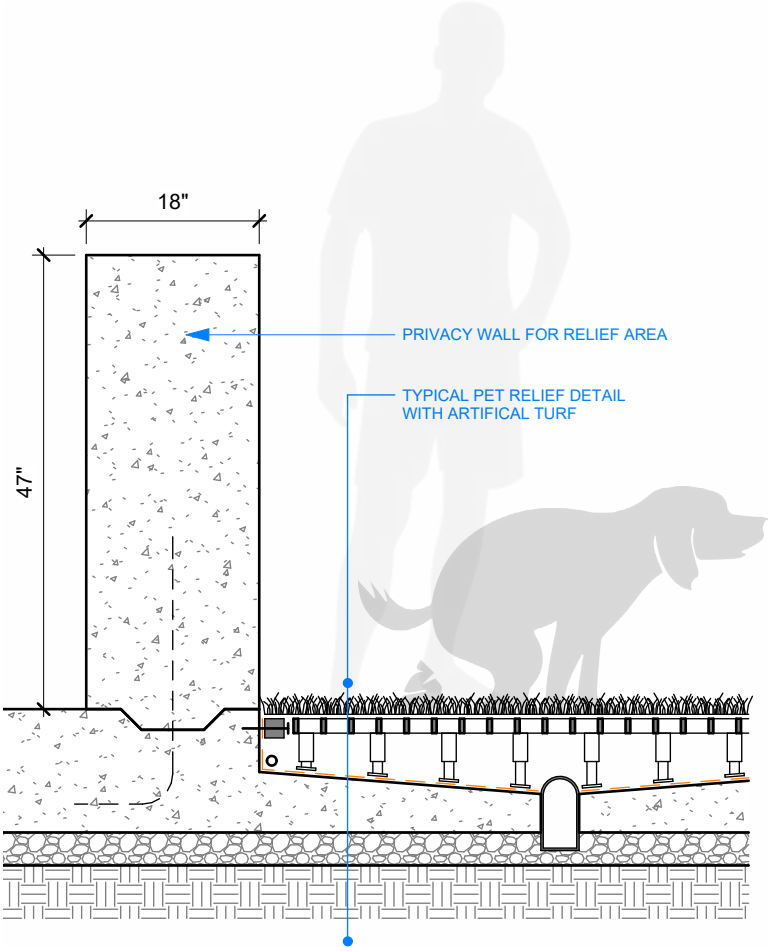


FIG 3.64 *[LEFT]*

Detail of pet relief area integrated in landscaping design with privacy wall. Refer to section A.3.2.5.2. (page 79) for more information.

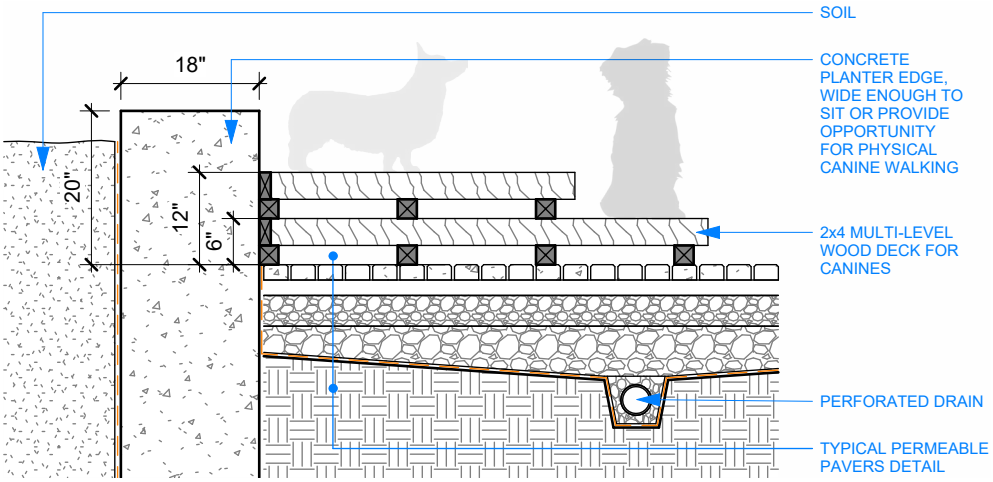
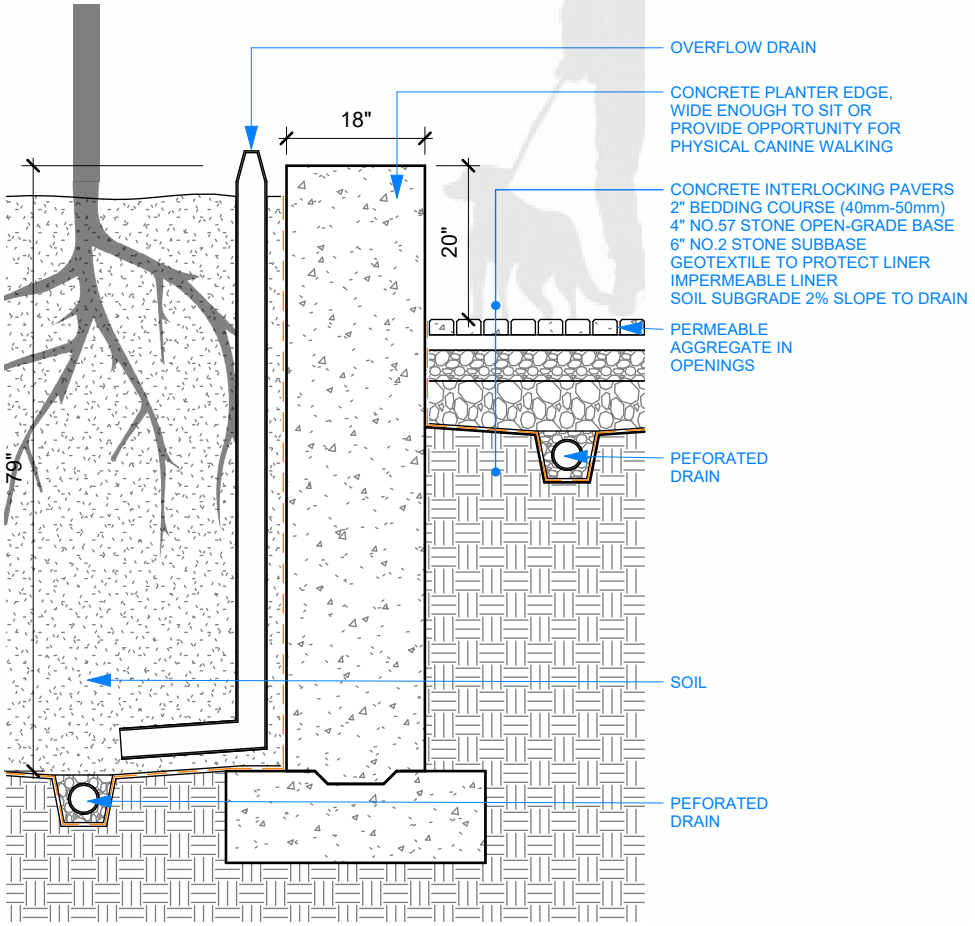


FIG 3.66 *[LEFT]*

Detail of typical multilevel wood deck for encouraged physical enrichment. Refer to section A.3.2.5.2. (page 80) for more information.

FIG 3.65 *[RIGHT]*

Detail of typical raised planted bed with enrichment walking path. Refer to section A.3.2.5.2. (page 80) for more information.



E.3.4.4 | CANINE WINTER CONSIDERATIONS
E.3.4.4.1 | DE-ICING ALTERNATIVES

Design Standard:

Exterior walkability can become more challenging due to salt dispersal for snow and ice melt on walkways and roads. These materials can be painful on paws and can cause injuries to our pets. Providing safe options during winter months and year round is extremely important for the health and wellness of pets and pet owners. The following chart shows suggestions and starting points to reference for pet-friendly snow/ice melting solutions.

FIG 3.143 | Example of magnesium chloride pellets.
FIG 3.144 | Example of sand on the sidewalk for extra traction.
FIG 3.145 | Example of heated paving system.

FIG 3.143 *[BELOW]*



Dog Friendly Salt:

(i.e. Calcium Chloride, Magnesium Chloride Pellets, Sodium Acetate)

Advantages:	Disadvantages:
- Low toxicity levels for humans and dogs compared to standard rock salt - Round in shape, rather than sharp crystals, to mitigate any unintentional cuts on paws if stepped on. - Does not crack the concrete surface below.	- Can be harmful to dogs if ingested in large quantities. - A bit more pricey than standard rock salt.

FIG 3.144 *[BELOW]*



Sand:

Advantages:	Disadvantages:
- Increases friction and traction on surface to walk on. - More effective in temperatures lower than -7°C (where rock salt is no longer effective) - No damage caused to concrete/paving if applied and removed appropriately.	- The not most cost effective solution. - Must be applied in high quantities to be effective (3-7 times more than rock salt). - Post clean up is required to remove sand.

FIG 3.145 *[BELOW]*



Heated Concrete Paving:

(i.e. electric, hydronic)

Advantages:	Disadvantages:
- No need for shoveling - No need for de-icing agents - Less manual labor to de-ice every season.	- High initial costs - Additional costs to operate the system.

E.3.4.4 | CANINE WINTER CONSIDERATIONS
E.3.4.4.2 | OUTDOOR OLA CONSIDERATIONS

Design Standard:

When looking at locations like Toronto Ontario that experience harsh winters, it's important to consider how to create outdoor spaces that accommodate cold temperatures and can allow for usage during cold winter seasons. The following chart shows suggestions and starting points to reference for winter design interventions in off leash areas.

FIG 3.146 | Example of Toronto Go Transit public waiting sheds for buses that can be implemented in outdoor dog parks for owners to stand in while their dogs play in the cold snow.
FIG 3.147 | Example of Toronto Go Transit public waiting sheds for trains that can be implemented in outdoor dog parks for owners to stand in while their dogs play in the cold snow.
FIG 3.148 | Example of fabric canopy with seating underneath.
FIG 3.149 | Example of steel canopy with seating underneath.
FIG 3.150 | Example of outdoor space heater.
FIG 3.151 | Example of trees dispersed through a dog park to break wind in addition to other landscaping benefits.
FIG 3.152 | Example of heated pavers during the winter time.

FIG 3.146 *[BELOW - TOP]*
FIG 3.147 *[BELOW - BELOW]*





Covered Spaces:
(Stand alone or Integrated with adjacent building on site)

Application Details
- Glass standing sheds like bus/train stops can be implemented as spaces for owners to stand in while their dogs play outside in the cold snow. - These structures can be located within or beside the OLA; as long as there is a direct connection into the OLA. - This covered space can be conditioned to maximize comfort within.

FIG 3.148 *[BELOW - TOP]*
FIG 3.149 *[BELOW - BELOW]*





Canopies:
(Wood, Fabric, or Steel)

Application Details
- Located within the OLA - Offers a roof over space for owners to stand or sit and watch dog

FIG 3.150 *[BELOW]*



Outdoor Space Heaters:

Application Details
- Located within the OLA around seating and areas where it's anticipated for owners to be when watching their dogs play.

FIG 3.151 *[BELOW]*



Strategic Landscaping to Break Wind:

Application Details
- Trees dispersed throughout OLA. - Line up trees strategically along the perimeter or around areas expected to have owners congregate

FIG 3.152 *[BELOW]*



Heated Flooring for Paved Areas:

Application Details
- Heated pavers located in areas of circulation for owners - Other De-icing options alternatives available in section E 3.4.4.1.

E.3.4.5 | CANINE DURABLE MATERIALS
E.3.4.5.1 | INTERIOR MATERIALS GENERAL

Design Standard:

The choice of materials can influence the health and well-being of pets and pet owners in addition to being aesthetically pleasing to the eyes. This includes incorporating materials for reducing noise and providing durable surfaces that can withstand wear and tear from animals. Materials can be coordinated with developers during pre-construction design phases or even adjusted during renovation stages for existing conditions. The following chart shows suggestions and starting points to reference for interior material selections

FIG 3.153 | Example of vinyl flooring. Ideal for rest spaces and low traffic/private area such as individual units. Also ideal for areas anticipated to get wet.
FIG 3.154 | Example of tile flooring. Ideal for rest spaces for dogs and good for wall applications too where necessary. Options include concrete and stone for areas anticipated to get wet.
FIG 3.155 | Example of laminate flooring. Good option for play areas that don't suit carpet but offer some traction.
FIG 3.156 | Example of hardwood flooring ideal and engineered for dogs.
FIG 3.157 | Example of carpet tile flooring. Recommended for ease of replacement in areas used for play. Roll out carpets in elevators during winter seasons.

FIG 3.153 *[BELOW]*



FIG 3.154 *[BELOW]*



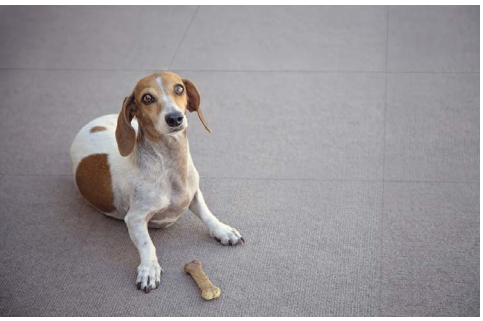
FIG 3.155 *[BELOW]*



FIG 3.156 *[BELOW]*



FIG 3.157 *[BELOW]*



Vinyl:

Advantages:	Disadvantages:
- Inexpensive - Waterproof - Scratch and stain resistant - Comfortable - Easy to clean and maintain.	- Dulls easily. - Less eco friendly. - Not super durable or long lasting.

Tiles:

Advantages:	Disadvantages:
- Long lasting and durable. - Timeless - Textured tiles with grout offer good traction for dogs. - Easy to clean and maintain. - Cool surface for dogs to lie on. - Scratch Resistant	- Can be slippery, so not ideal in play areas. - Can be more expensive.

Laminate:

Advantages:	Disadvantages:
- Looks like wood and is cheaper in price. - Hard and durable. - Not 100% scratch resistant, but scratches are less noticeable. - Easy to clean. - Cool surface for dogs to lie on.	- Can be slippery for dogs (slightly more traction than Hardwood). - Not as durable as Hardwood flooring.

Hardwood:

Advantages:	Disadvantages:
- Beautiful aesthetics. - Natural colors. - Long lasting (if maintained properly). - Cool surface for dogs to lie on.	- Expensive and high maintenance requirements. - Less traction for dogs. - Susceptible to scratches. - Easier to see pet hair

Carpet:

Advantages:	Disadvantages:
- Great traction for dogs to run on and play. - Retain rich smells for the dog to experience. - Comfortable to lay on for dogs. - Harder to see pet hair everywhere.	- Traps fur, dust and dirt. - Can store fleas, ticks and other pests your dog may bring in.

E.3.4.5 | CANINE DURABLE MATERIALS
E.3.4.5.2 | INTERIOR MATERIALS OLA

Design Standard:

Indoor public play areas (OLAs) also require canine friendly materials for obvious reasons. The following chart shows suggestions and starting points to reference for interior public play areas.

FIG 3.158 | Example of rubber flooring installed for play areas.
FIG 3.159 | Example of synthetic turf for play areas.
FIG 3.160 | Example of concrete flooring.

FIG 3.158 *[BELOW]*



Rubber:

- Great for play areas where running is anticipated.

Advantages:	Disadvantages:
- Comfortable - Durable - Slip Resistant with maximum traction. - Easy maintenance.	- Can contain undesired smells. - Not the most aesthetically pleasing material.

FIG 3.159 *[BELOW]*



Synthetic Turf:

- Great alternative from real grass for indoor play areas and relief spaces.

Advantages:	Disadvantages:
- Great for dogs - Discourages undesired digging. - Easy maintenance. - Durable - Non-toxic	- Will heat up more than real grass in direct sunlight - Expensive to install for large areas as it requires proper drainage systems.

FIG 3.160 *[BELOW]*



Concrete:

- Great for support spaces that aren't meant for playing on.
- Ideal for wall application.

Advantages:	Disadvantages:
- Durable and long lasting. - Cheaper option - Easy maintenance. - Timeless - Cold for dogs to lie on	- Slippery and not good for older dogs with joint issues.

E.3.4.5 | CANINE DURABLE MATERIALS

E.3.4.5.3 | EXTERIOR MATERIALS

Design Standard:

Every material has it's strength and weaknesses which make them optimal for different applications. The variety of trade-offs that should be considered when selecting a material include cost, durability, sustainability, maintenance, usability, and comfort. In most cases, a combination of surface materials may be necessary to meet the given needs of a space. The following chart shows suggestions and starting points to reference for exterior material selections.

FIG 3.161 | Example of grass.
FIG 3.162 | Example of turf.
FIG 3.163 | Example of sand.
FIG 3.164 | Example of pea gravel.
FIG 3.165 | Example of wood chips/mulch.
FIG 3.166 | Example of permeable pavers.
FIG 3.167 | Example of concrete.
FIG 3.168 | Example of asphalt.

Grass:

FIG 3.161 *[BELOW]*



- For run and play areas for dogs.
- For relief areas.
- For landscaping purposes on site.

Advantages:	Disadvantages:
- Low Cost - Natural - Aesthetically pleasing - Soft on paws - Clean (doesn't spread off)	- Not suitable for smaller sites with poor drainage - Requires regular maintenance, which increases costs. - Limited accessibility.

Synthetic Turf:

FIG 3.162 *[BELOW]*



- For run and play areas for dogs
- For relief areas.

Advantages:	Disadvantages:
- Effective for high intensity usage. - Good drainage - Can contain odour controlling infill. - Easy to clean . - Accessible - Clean (doesn't spread off)	- Higher installation costs - Requires regular hosing down in summer. - Prone to heating up more in sun. - Not environmentally friendly - Higher replacement requirements.

Sand:

FIG 3.163 *[BELOW]*



- For play and digging areas.

Advantages:	Disadvantages:
- Low cost - Easy to install. - Excellent drainage - Malleable materials that allows for digging - Soft on paws	- Not wheelchair accessible - Can be messy. - Requires regular maintenance like raking to remove debris. - May require irrigation for dust control.

Pea Gravel:

FIG 3.164 *[BELOW]*



- Consider in areas where drainage is challenging.
- Relief areas
- Avoid in areas for dog runs

Advantages:	Disadvantages:
- Low cost - Easy to install. - Excellent drainage - Malleable materials that allow for digging	- Not wheelchair accessible - Can be messy. - Difficult to clean and sanitize. - Prone to dust - Can be hard on paws

FIG 3.169 *[RIGHT - FACING]*

Picture of Truffles as a puppy, sitting on the sidewalk.

Wood Chips / Mulch:

FIG 3.165 *[BELOW]*



- Consider in areas with good existing drainage and sun exposure.

Advantages:	Disadvantages:
- Low cost - Easy to install. - Excellent drainage - Malleable materials that allow for digging - Soft on paws - Sustainable	- Not wheelchair accessible - Compacts, degrades ad crusts over time. - Requires regular topping up. - Difficult to clean and sanitize. - Mold and odor prone.

Permeable Pavers:

FIG 3.166 *[BELOW]*



- Great for circulation paths, benches and areas for human use.
- Avoid for high intensity play areas.

Advantages:	Disadvantages:
- Allows infiltration and effective drainage . - Durable - Accessible - Easy to clean	- Surface prone to overheating. - Hard on paws. - Expensive to install.

Concrete:

FIG 3.167 *[BELOW]*



- Great for circulation paths, benches and areas for human use.
- Avoid for high intensity play areas.

Advantages:	Disadvantages:
- Highly durable - Accessible - Easy to clean	- Requires drainage. - Surface prone to overheating. - Hard on paws.

Asphalt:

FIG 3.168 *[BELOW]*



- Great for circulation paths, benches and areas for human use.
- Avoid for high intensity play areas.

Advantages:	Disadvantages:
- Durable - Accessible - East to clean	- Requires drainage. - Surface prone to overheating. - Hard on paws.


VOYAGER

E.3.4.6 | CANINE FRIENDLY LANDSCAPING

Design Standard:

In addition to the design of canine-friendly landscaping that discourages wear and tear and encourages physical enrichment, it's also important to consider the type of plants that are not only beautiful but are also non-toxic to dogs. The following chart shows a list of the most common plants to avoid when considering the safety of our canine companions.

FIG 3.170 | Example of Autumn Crocus.
FIG 3.171 | Example of Azalea.
FIG 3.172 | Example of Chrysanthemum.
FIG 3.173 | Example of Daffodils.
FIG 3.174 | Example of English Ivy.
FIG 3.175 | Example of Lily of the Valley.
FIG 3.176 | Example of Oleanders.
FIG 3.177 | Example of Sago Palm.
FIG 3.178 | Example of Tulips.
FIG 3.179 | Example of Hyacinth.
FIG 3.180 | Example of Yew.
FIG 3.181 | Example of Tomato.

FIG 3.170 *[BELOW]*



Autumn Crocus:

(Colchium autumnale)

Description	Symptoms
- Toxicity Level: HIGH - Origins from the Mediterranean and Asia.	- Burning sensation in mouth and throat - Vomiting/diarrhea with blood - Seizures - Liver/kidney failures - Heart arrhythmias - Sudden death

FIG 3.171 *[BELOW]*



Azalea:

(Rhododendron spp)

Description	Symptoms
- Toxicity Level: HIGH - Over 250 species found throughout North America - Bloom in spring through fall	- Vomiting - Diarrhea without blood - Excessive drooling - Changes in heart rate - Arrythmias - Low blood pressure - Seizures - Coma - Sudden death

FIG 3.172 *[BELOW]*



Chrysanthemum:

(Chrysanthemum indicum)

Description	Symptoms
- Toxicity Level: LOW - Native in Asia	- Excessive drooling - Vomiting - Diarrhea - Incoordination/imbalance with extreme ingestion of the plant.

FIG 3.173 *[BELOW]*



Daffodil:

(Narcissus pseudonarcissus)

Description	Symptoms
- Toxicity Level: MILD TO MODERATE	- Oral irritation and drooling - Vomiting - Diarrhea - Low blood pressure - Low heart rate - Cardiac arrhythmias - Abnormal breathing

FIG 3.174 *[BELOW]*



English Ivy:
(Hedra helix)

Description	Symptoms
- Toxicity Level: MILD TO MODERATE - Recognized for how it climbs up the side of older buildings	- Oral irritation - Drooling - Vomiting - Diarrhea

FIG 3.175 *[BELOW]*



Lily of the Valley:
(Convallaria majalis)

Description	Symptoms
- Toxicity Level: MODERATE TO SEVERE	- Vomiting - Diarrhea - A Slowed heat rate - Low blood pressure - Seizures - Sudden death

FIG 3.176 *[BELOW]*



Oleander:
(Nerium oleander)

Description	Symptoms
- Toxicity Level: MODERATE TO SEVERE - Native to Northwest Africa and Southeat Asia, but now grows in Southwestern parts of America (Arizona, California, Texas, etc.)	- Excessive Drooling - Vomiting - Diarrhea - Arrythmias - Collapse - Seizures - Sudden Death

FIG 3.177 *[BELOW]*



Sago Palm:
(Cycas revoluta)

Description	Symptoms
- Toxicity Level: HIGH - Highest concentration in seeds	- Liver failure 2 to 3 days after consumption. - Vomiting - Diarrhea - Yellow appearance in skin - Fluid build up in the abdomen - Weakness and imbalance

FIG 3.178 *[BELOW]*



Tulip:
(Tulipa spp.)

Description	Symptoms
- Toxicity Level: MILD TO MODERATE - Most toxic in the blub.	- Vomiting - Diarrhea - Excessive Drooling - Oral irritation - Increased heart rate and respiratory rate - Trouble breathing

FIG 3.179 *[BELOW]*



Hyacinth:
(Hyacinthus orientalis l)

Description	Symptoms
- Toxicity Level: MILD TO MODERATE - Most toxic in the blub.	- Vomiting - Diarrhea - Excessive Drooling - Oral irritation - Increased heart rate and respiratory rate - Trouble breathing

FIG 3.180 *[BELOW]*



Japanese Yew / English Yew / Chinese Yew:
(Taxus cuspidate / Taxus baccata / Taxus chinensis)

Description	Symptoms
- Toxicity Level: HIGH - Popular shrubs in landscaping because of their tolerance to winter seasons.	- Excessive drooling - Vomiting - Diarrhea - Dilated pupils - Trouble breathing - Tremors - Seizures - Sudden changes in heart rate and blood pressure - Sudden death

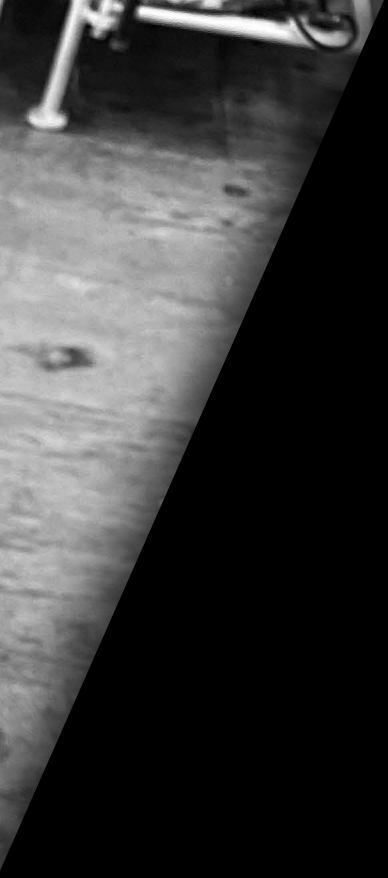
FIG 3.181 *[BELOW]*



Tomatoes:
(Solanum lcyopersicum)

Description	Symptoms
- Toxicity Level: MILD - Only toxic when green or if consumed whole.	- Excessive drooling - Lack of appetite - GI upset (vomiting and diarrhea) - Dilated Pupils - Depression - Increased heart rate





CHAPTER 4.0

HARMONIOUS INTERVENTION

4.1 | A DAY IN THE LIFE

It's 7am on a Tuesday morning in June and light begins to filter through the curtains, nudging me awake. I roll over to find Truffles, my three-year-old tri-coloured corgi, already sitting up on my bed and wagging her little ***nubbin*** *with excitement. She knows it's time for our morning walk. I stretch, triggering her morning stretch, which is then greeted by her enthusiastic licks to the ear. As I roll out of bed, Truffles hops off and climbs up the windowsill ledge to sit and stare outdoors while I get dressed for the day.*

As I walk out the bedroom door, Truffles runs to ***her place*** *to patiently wait for her* ***morning chow time*** *like clockwork. I open the cabinet door below the kitchenette countertop to scoop out 1 cup of kibble and place it in her food bowl that's already adjusted to her height in the custom built sliding drawer. I pull over the faucet on the left to add fresh water to her bowl and signal Truffles to come eat while I freshen up in the washroom. After a quick splash of cold water on my face to end my morning routine, I find Truffles sitting by the door, breakfast done and ready to go out for her morning walk. I slip on my sneakers, get Truffles in her leash and harness, and we head out the door.*

def'n. ***her place*** *//*

Doggy slang for dog bed. If there are multiple beds in different rooms, then each bed can be specified by location. For example, the dog bed in the office would be identified as "office place" or the dog bed in the living room would be the "living room place". However, if the living room place is the main dog bed, then there is no need to indicate the location, and instead is just referred to as "the place".

def'n. ***morning chow time*** *//*

Doggy slang for breakfast, which includes food and water.

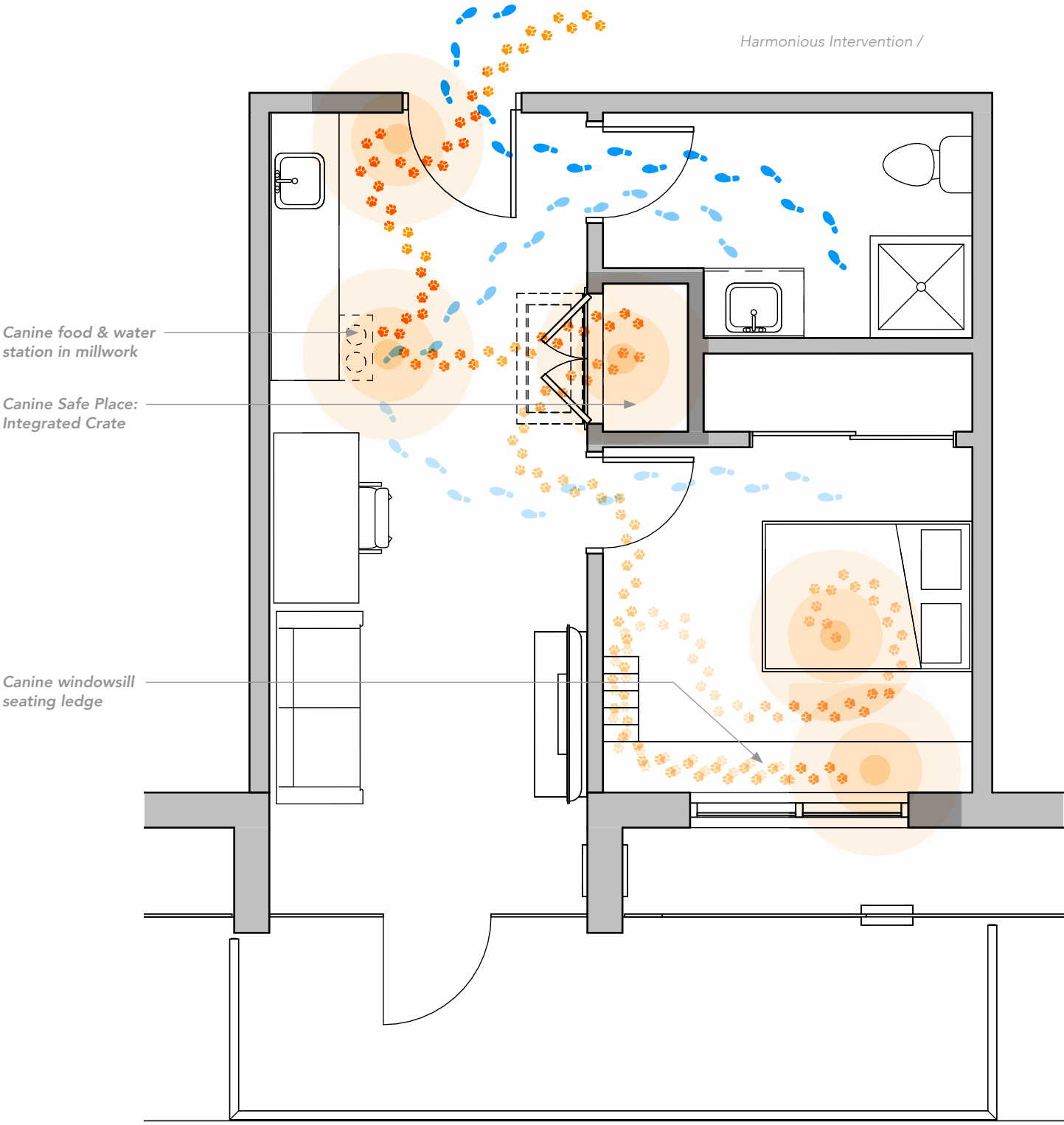


FIG 4.1 *[ABOVE]*

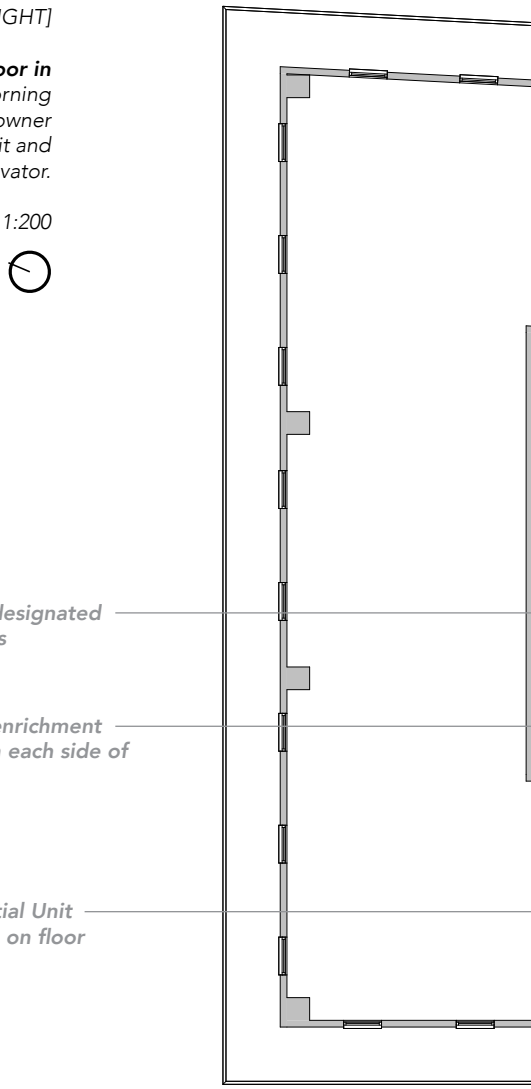
*Typical **residential coop unit**, showing the morning routine of a dog and owner once they wake up.*

Drawing Scale = 1:50

FIG 4.2 *[RIGHT]*

*Typical **residential floor in tower,** showing the morning routine of a dog and owner after they leave their unit and head for the elevator.*

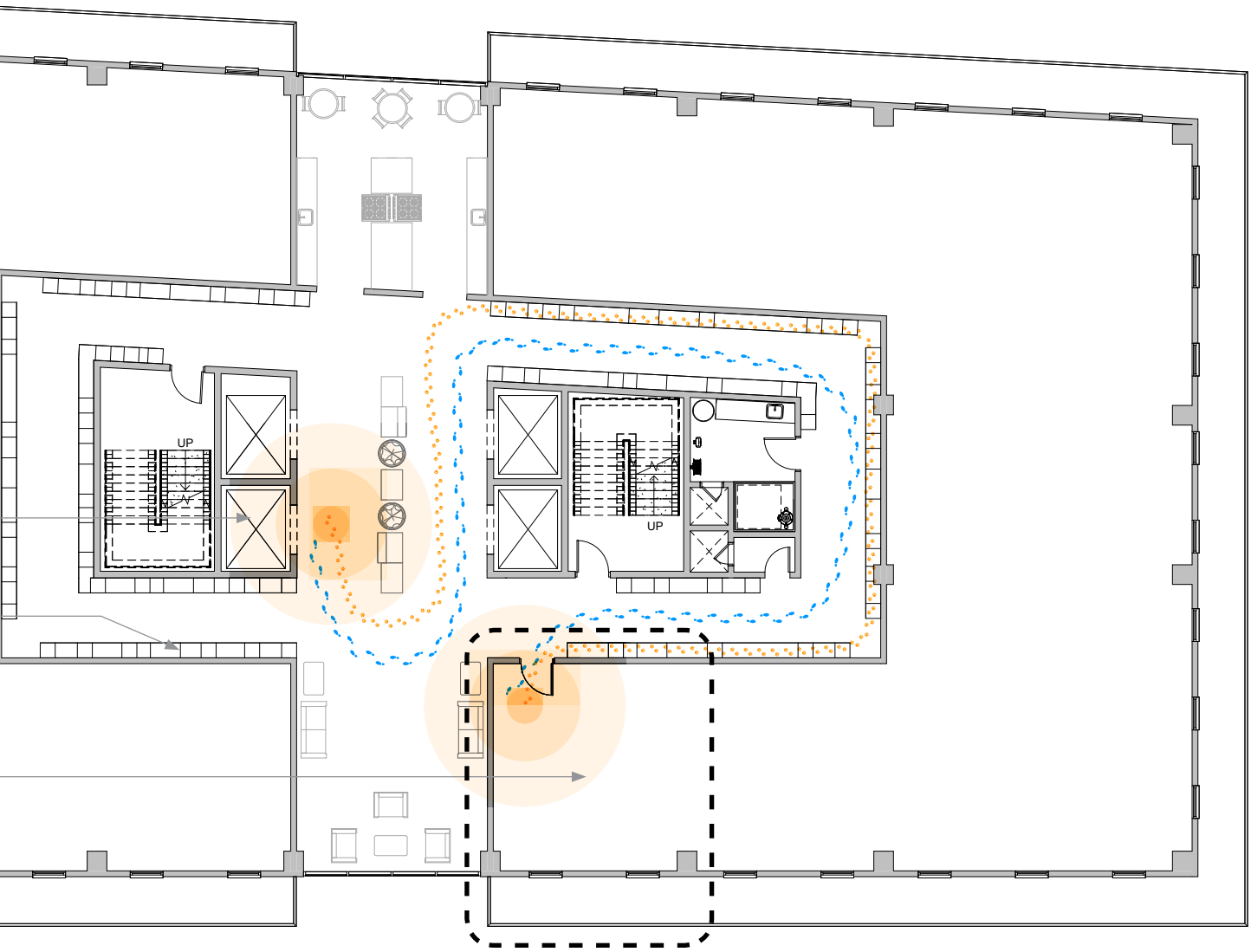
Drawing Scale = 1:200



*Although the elevators are just to our left, nothing stops Truffles from taking the scenic route on the right, if that means being able to run up and down the enrichment paths in the hallway. We finally get to the elevators to push the button and she patiently sits and waits for the **magical transportation room** to arrive.*

*def'n. **magical transportation room** //*

Doggy slang for elevator. Since it's safe to assume that dogs don't know what an elevator is or how they work, it's comedic to think about their perspective when they do use one. They walk into a small metal box, the door closes, and moments later it opens to an entirely different place—truly a "magical room" in their eyes!


UP
UP

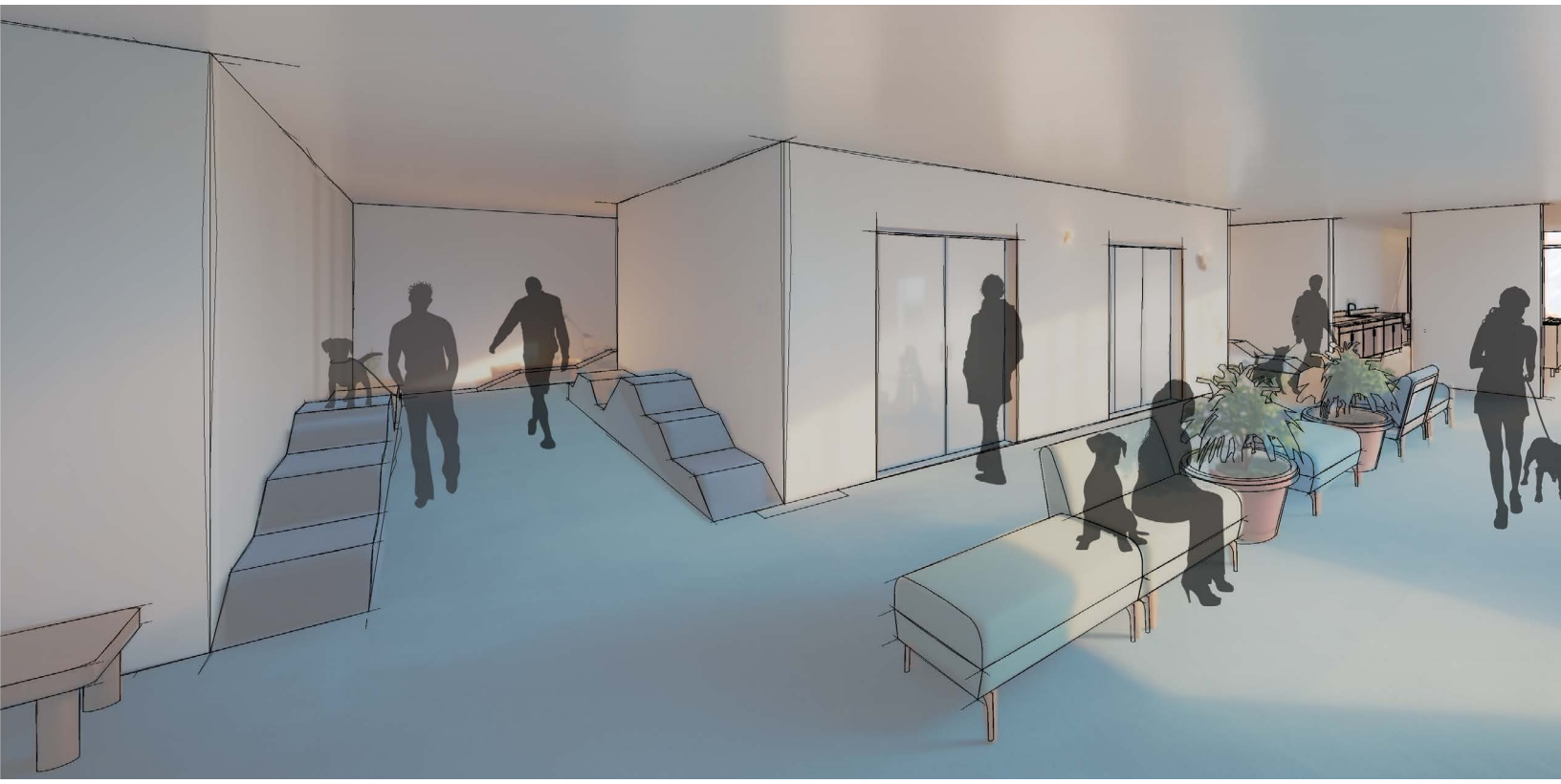
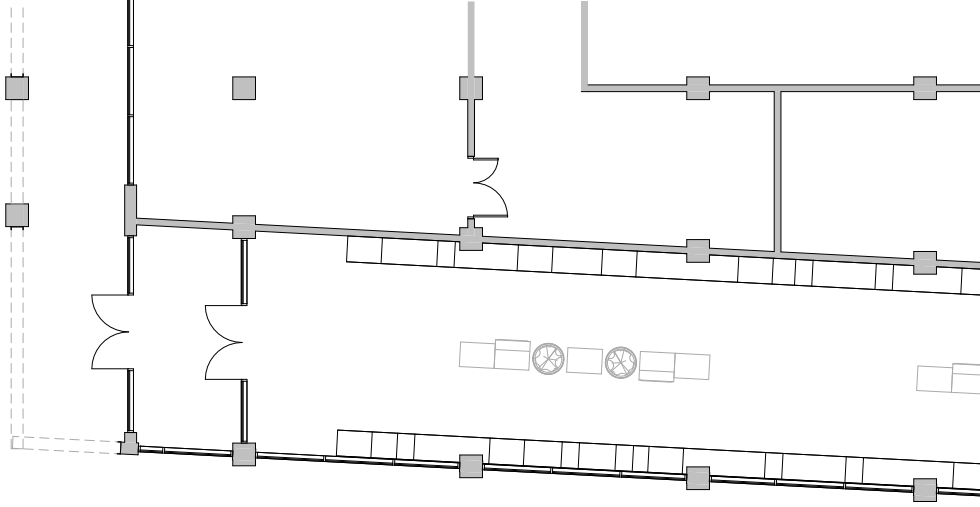




FIG 4.3 *[LEFT]*

Conceptual render of the ***elevator waiting area****, featuring a variety of canine centric elements such as the enrichment ramps in the corridors and wide walking area.*



Ding! The door opens and we make it to the lobby. I wave to my concierge on the left and yell "good morning Steve!" as Truffles and I head towards the right to our usual exit closest to the dog park. Of course, if there are no other ***furriends*** *nearby, you can find Truffles pulling towards the side of the corridor to walk up and down the enrichment path.*

def'n. ***furriends*** *//*

Doggy slang for other canine companions, whether new quaintanecs or old friends.

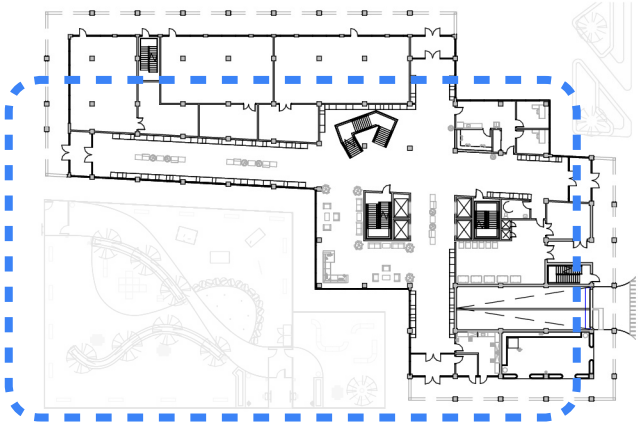


FIG 4.4 *[LEFT]*

Key plan of the ***ground floor plan*** *in Liberty Village.*

Drawing Scale = 1:1000

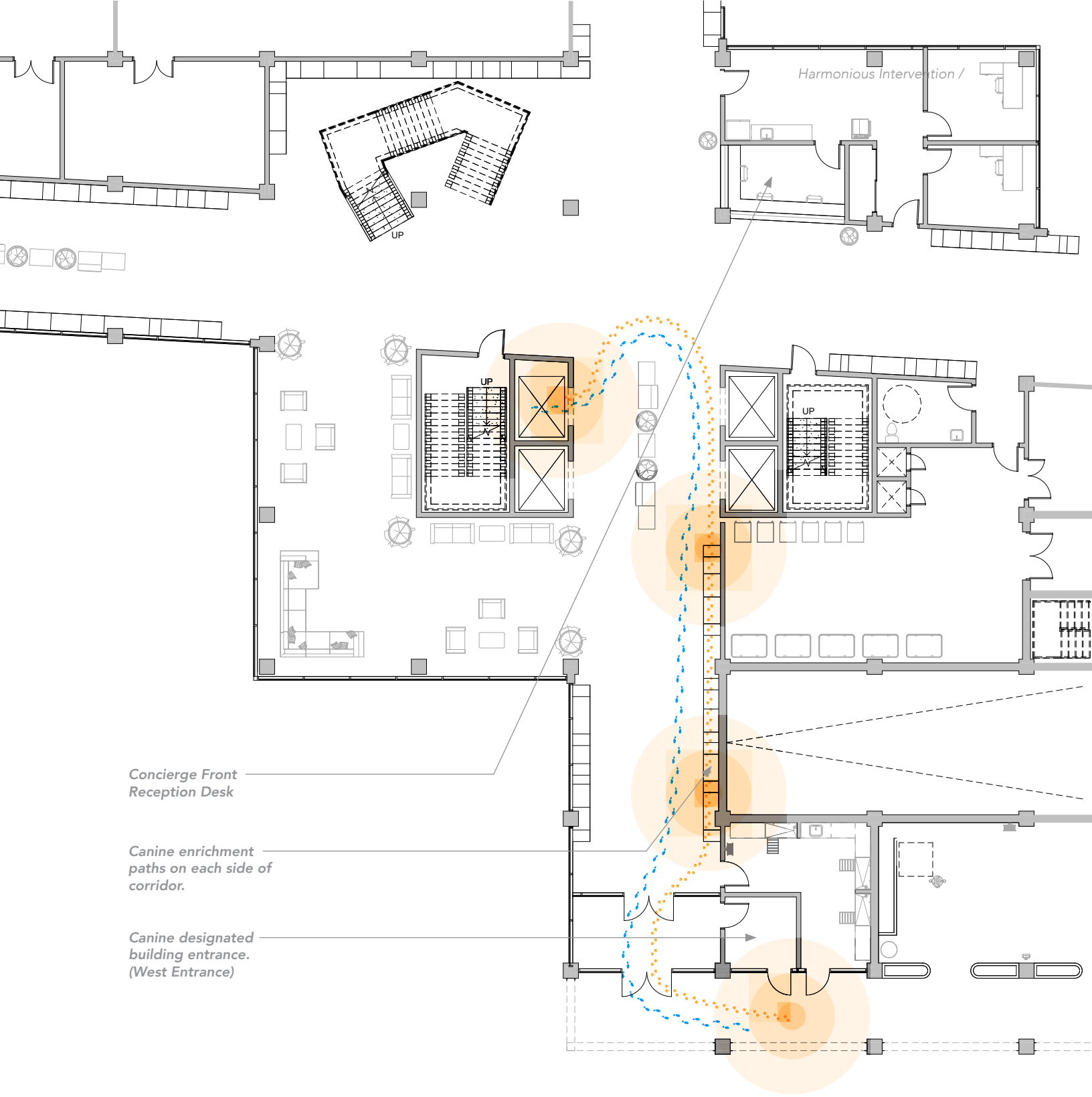


FIG 4.5 *[ABOVE]*

Callout floor plan of ***typical ground level****, showing the path taken in the morning from the elevator to the* ***designated canine entrance****.*

Drawing Scale = 1:200



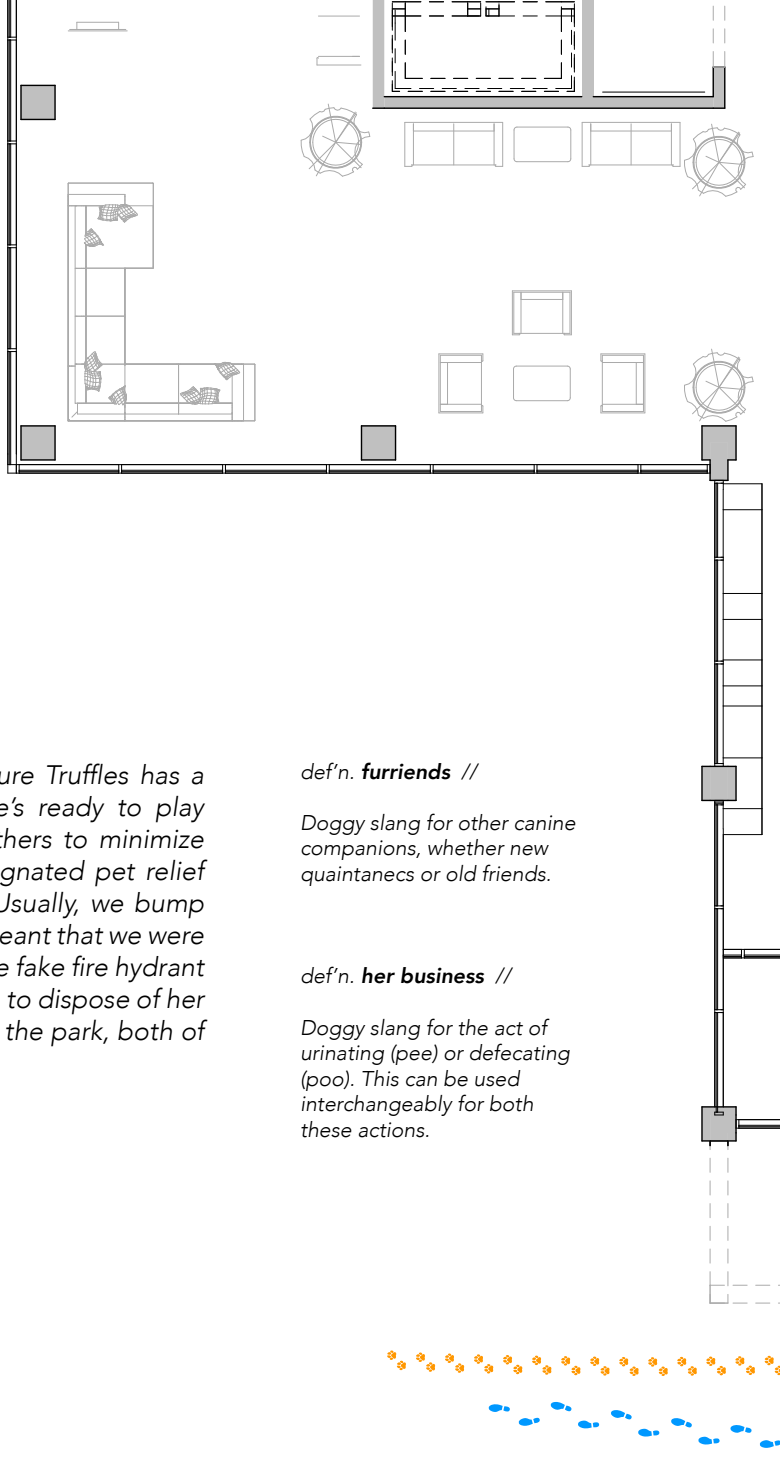
FIG 4.6 *[LEFT]*

Conceptual render of the ***lobby atrium****, featuring high ceilings, lots of natural light, a beautiful view of the OLA on site. This area of-fers a wide open space to not only lounge, but also to encourage play encounters between dogs in the build-ing.*

FIG 4.7 *[RIGHT]*

Conceptual render of the ***canine designated entrance*** *from the exterior, featuring an architectural arcade and large sidewalk path integrated in the landscaping as a smoother buffer between the building and the road.*





Before heading to the off leash area, I always make sure Truffles has a chance to relieve herself not only to ensure that she's ready to play without any interruptions, but also as a courtesy to others to minimize messes in the park. So, we made our way to the designated pet relief area, conveniently located right beside the entrance. Usually, we bump into a few of her ***furriends*** *but today was empty, which meant that we were quickly in and out. She walked her usual circle around the fake fire hydrant to sniff and did* ***her business****. I pulled out her poop bags to dispose of her waste in the bin nearby and with that, we headed off to the park, both of us eager for the fun that awaited us.*

def'n. ***furriends*** *//*

Doggy slang for other canine companions, whether new quaintanecs or old friends.

def'n. ***her business*** *//*

Doggy slang for the act of urinating (pee) or defecating (poo). This can be used interchangeably for both these actions.

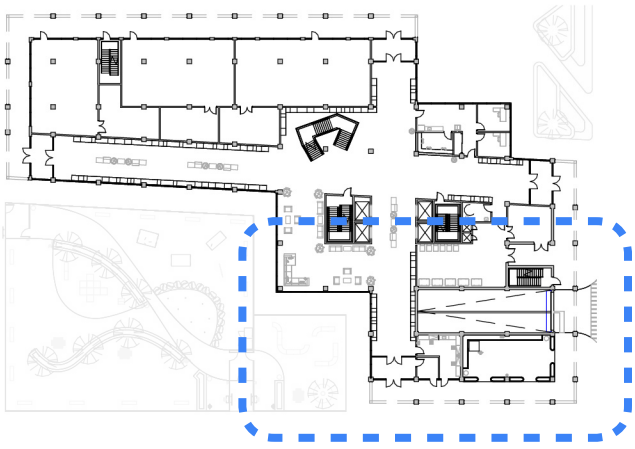


FIG 4.8 *[LEFT]*

Key plan of the ***ground floor plan*** *in Liberty Village.*

Drawing Scale = 1:1000

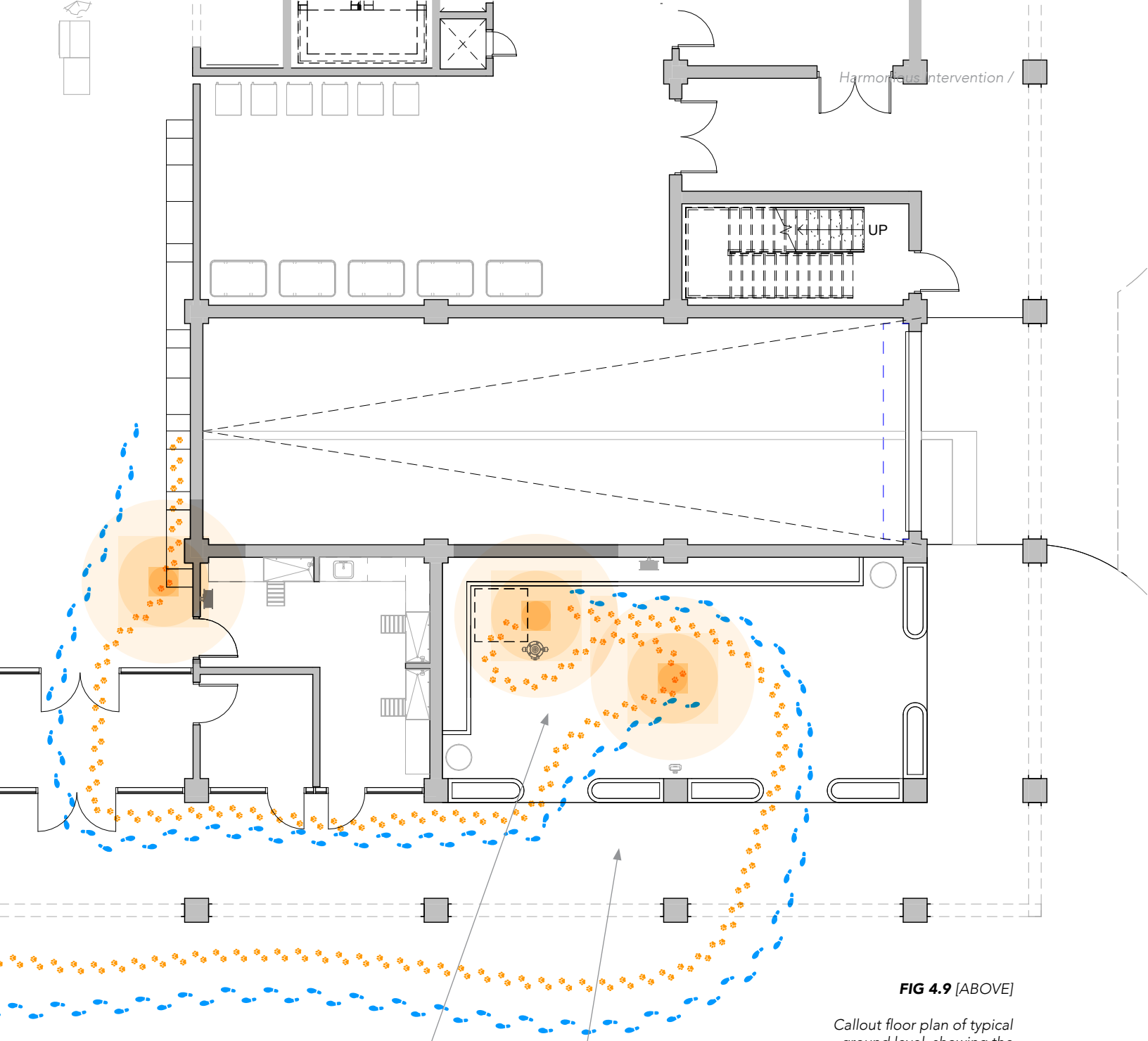


FIG 4.9 *[ABOVE]*

Callout floor plan of typical ground level, showing the path taken by the dog and owner to the ***designated pet relief area*** *on site beside the entrance. Situated at the back of the site, this area is designed to be both welcoming and safe. It features familiar objects like a fake fire hydrant and soft landscaping, creating a comfortable environment for dogs. A hose bib is available for easy cleaning, and the synthetic turf ensures proper drainage.*

Drawing Scale = 1:150

FIG 4.10 *[RIGHT]*

Conceptual render of the canine ***designated pet relief area*** *on grade, featuring plenty of space for dogs to do their business. Providing this canine facility not only serves the building tenants, but also the surrounding community.*





As we approached the park's gate entrance, Truffles eagerly tugs at her leash. The park, her sanctuary, presents two options: one for smaller, shy dogs, while the other reserved for the bigger, more outgoing ones. Though Truffles isn't the biggest dog out there, she's a high energy, social butterfly who seems to identify as a big dog herself, so we veer left into the larger off-leash area.

We're usually among the first to enter the park in the morning which means that we're all by our lonely selves. To keep ourselves entertained, we stop by the storage unit near the gate entrance, accessible only to building tenants with a keycard, and grab a ball to play with. Sometimes we switch it up with a frisbee, but today we opted for the ball since we were in a ball mood. We stroll over to the grassy area and start a game of fetch.

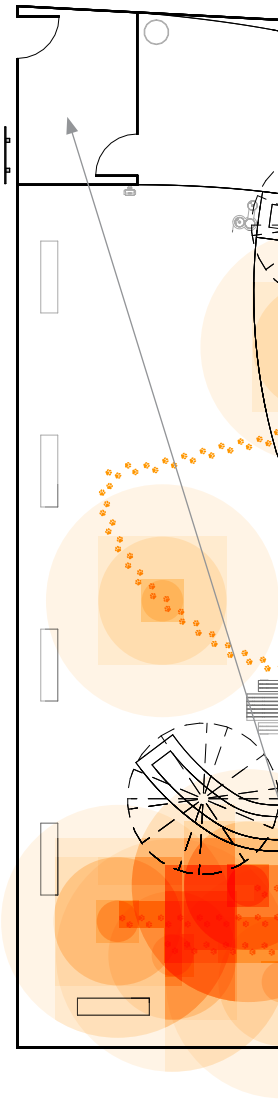
Oh look, Piper and Oreo just walked in! I noticed them first, but it didn't take long for Truffles to catch on. Mid-fetch, she turned, saw her ***furriends****, and bolted towards them in a flash. The trio dashed around the park, through the grass, the sand pit, and the mulch area, where they chased each other around the obstacles with joy. I join Rebecca and Shelly,* ***mothers*** *of Piper and Oreo (respectively), and we have our usual morning chit chats on the bench nearby their playing session. Eventually, I notice Truffles lying on the ground, panting with her mouth wide open and tongue drooping to the side. It was a clear sign that playtime was over, and with the clock approaching 8:30 am, it was time to head home to get ready to leave for work. I call over Truffles, clip her leash back on, say good bye to Rebecca, Shelly, Piper and Oreo and we head out.*

def'n. ***furriends*** *//*

Doggy slang for other canine companions, whether new quaintanecs or old friends.

def'n. ***mothers*** *//*

Doggy slang for the owners (as biological females). If the owners are biological male, then "fathers" would be used instead. "Parents" would be used to describe both owners as a couple.



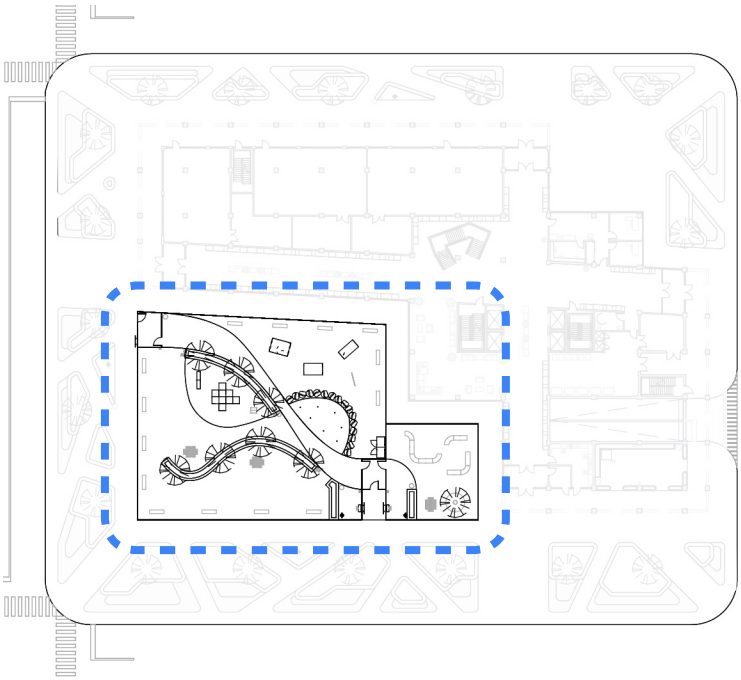


FIG 4.11 *[LEFT]*

Key plan of the ***site plan*** *in Liberty Village.*

Drawing Scale = 1:1000

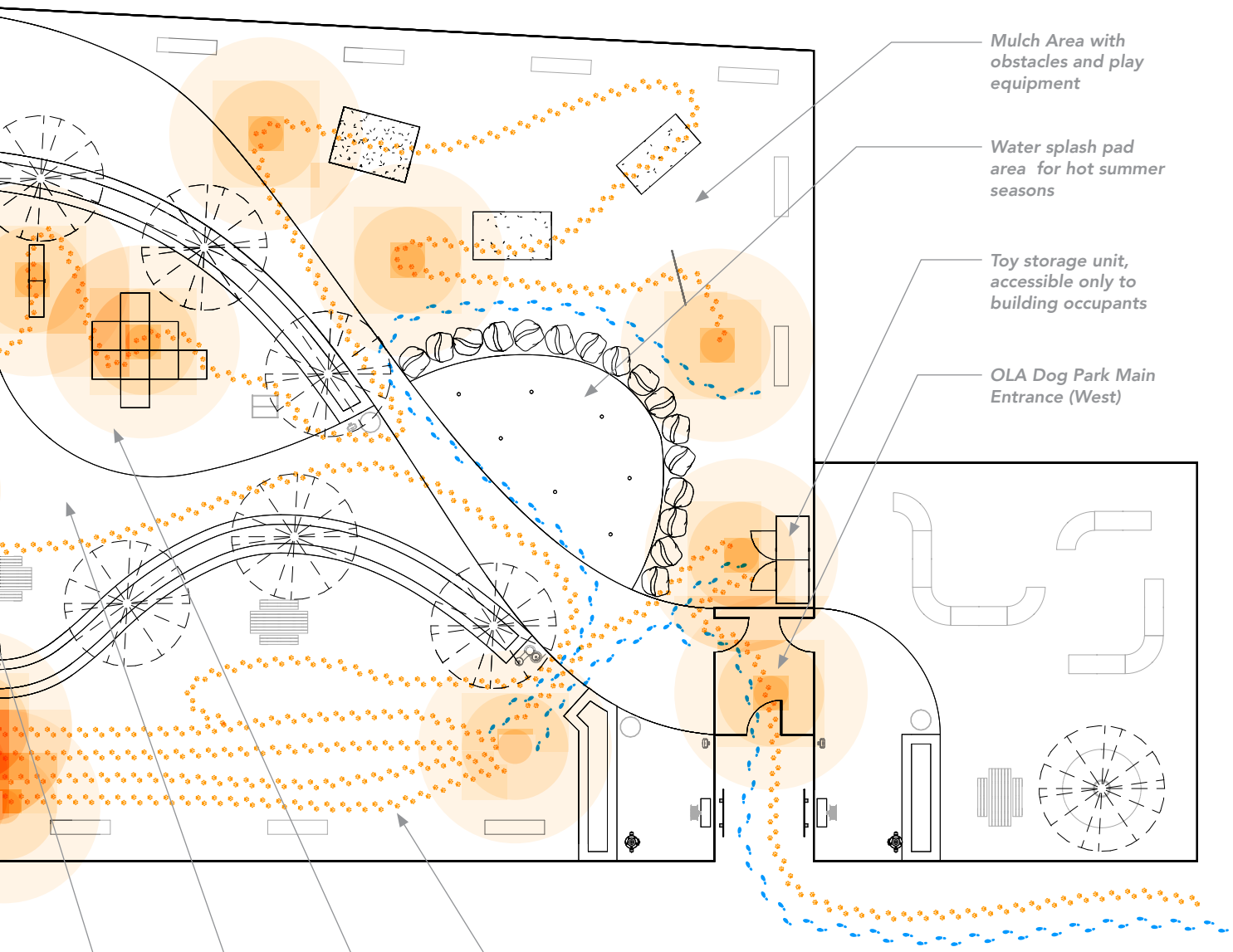


FIG 4.12 *[ABOVE]*

*Callout plan of the **off leash area (OLA) dog park** on site, featuring plenty of enrichment opportunities for dogs. The right side is designated for smaller or more timid dogs, while the left side is reserved for larger or more outgoing dogs. Signage at each entrance explains the rules and etiquette of the space. The main larger off-leash area (OLA) features various surface options, including a sand pit, grass, mulch, interlocking pathways, and a water splash pad for hot summer days. Numerous trees provide ample shade for resting, and there are plenty of agility and enrichment obstacles throughout for both mental and physical stimulation.*

Drawing Scale = 1:200



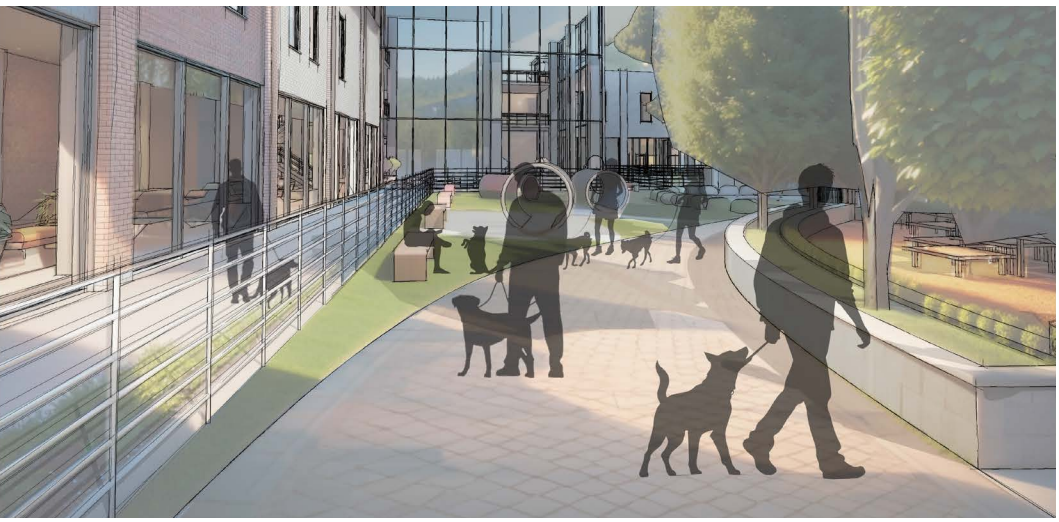


FIG 4.13 *[LEFT]*

*Conceptual render of the o**ff leash area (OLA) dog park** view from the **north entrance**, featuring permeable paver interlocking on the main walking path.*



FIG 4.14 *[LEFT]*

Conceptual render of the ***off leash area (OLA) dog park*** *view from the* ***west entrance****, featuring the wa-ter splash pad on one side of the walking path and the grassy fetch area on the other.*



FIG 4.15 *[ABOVE]*

Conceptual render of the ***off leash area (OLA) dog park****, featuring the grassy area and sand pit with agility obstacles dispersed throughout.*

Since my boss told me I can come in a bit later to the office that day, I had more time to spend with Truffles outside that morning. So, rather than exiting the park towards the north to access the north entrance of the building, we exited the park the same way we entered (towards the west) to enjoy a leisurely walk along the beautifully landscaped path. Amidst the zigging-and-zagging through the planters and hopping up and down the wooden deck features, we bumped into a few other dogs on the sidewalk before reaching the buildings north entrance.

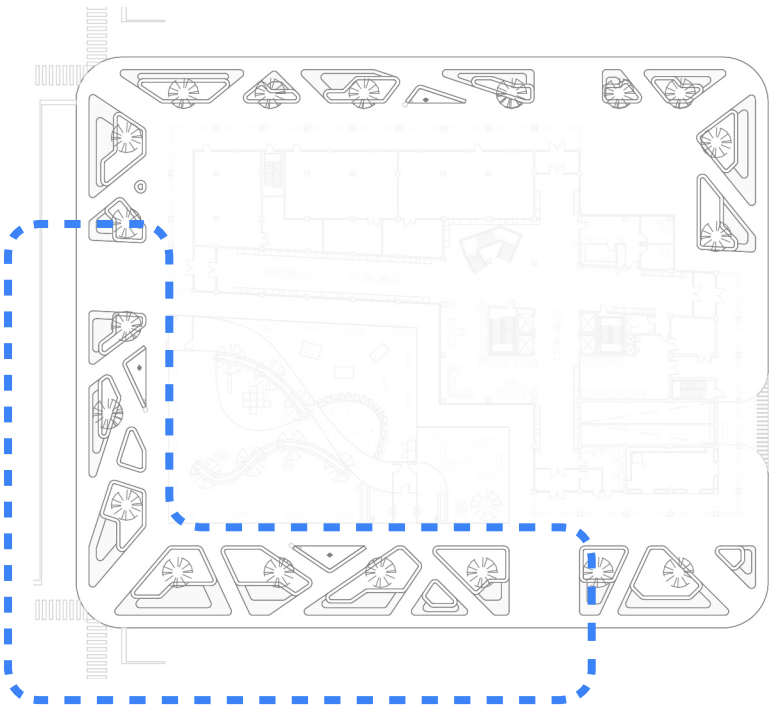


FIG 4.16 *[BELOW]*

*Key plan of the **site plan** in Liberty Village.*

Drawing Scale = 1:1000

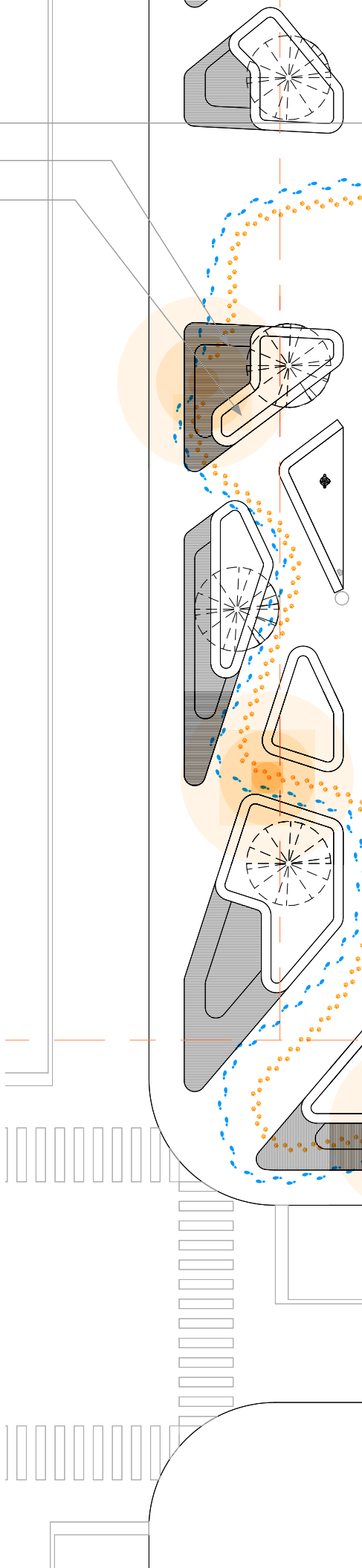


FIG 4.17 *[RIGHT]*

*Callout plan of the **playful landscaping** along the perimeter on site, featuring plenty of enrichment opportunities for dogs. Raised planter beds are strategically placed to discourage dogs from urinating on plants, while integrated relief areas encourage them to use designated spaces. Additionally, there are also multi level wooden decks designed with the planters to add to the playfulness of the circulation.*

Drawing Scale = 1:200

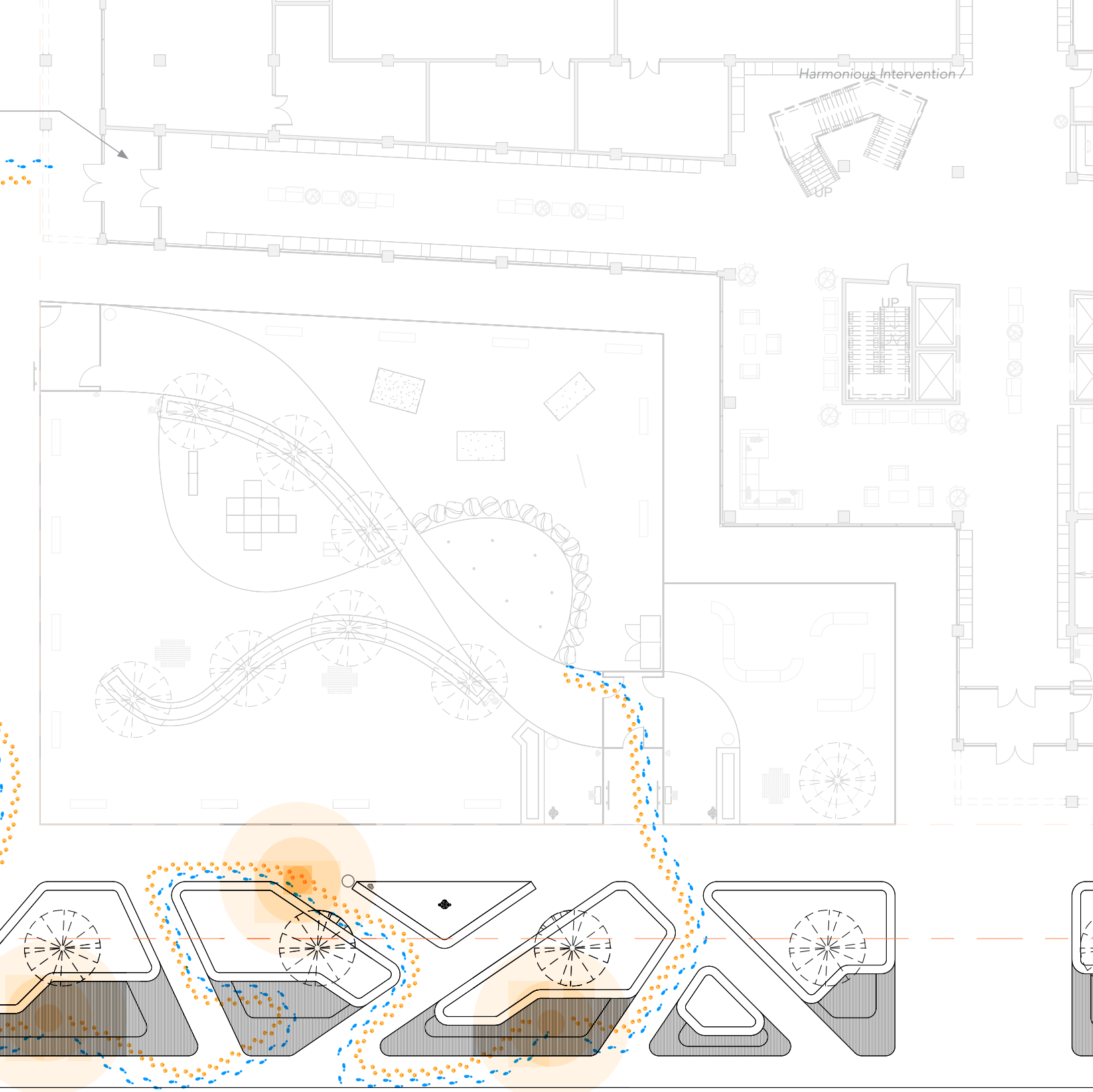

UP
UP

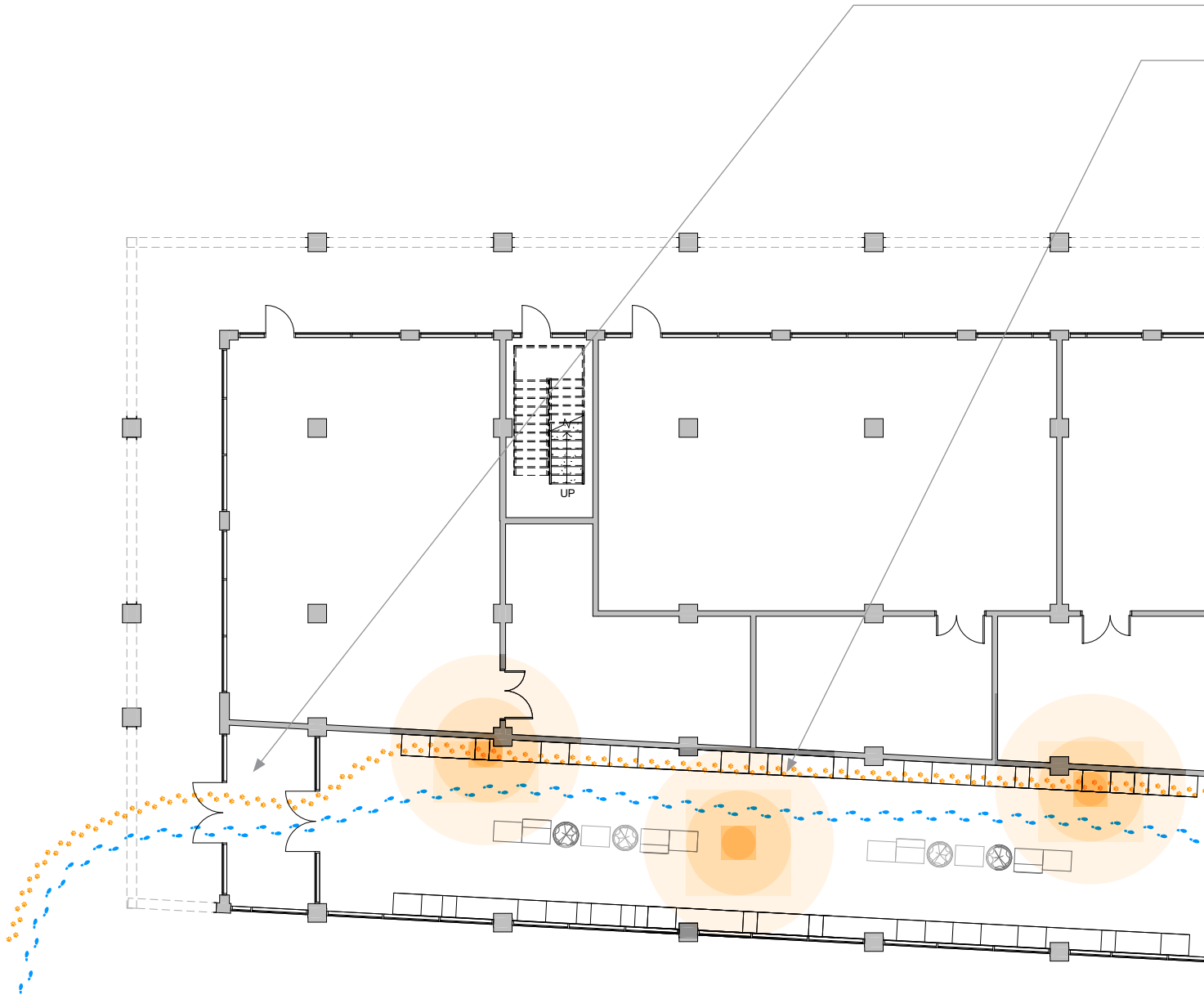
FIG 4.18 *[RIGHT]*

Conceptual render of the ***perimeter landscaping*** *around the site from the corner of Liberty Street and Hanna Avenue, featuring the raised planter beds and multi level wooden decks.*





As we enter the building's north entrance, Truffles eagerly tugs at the leash, pulling toward the sides to walk along the enrichment paths. This is her favorite route due to the long, continuous stretch. I always make an effort to take this path, unless she's wet or muddy from a play session. In that case, we head back to the building's west entrance, where we originally exited, to pass through the Pet Spa. There, I'd clean her up and wipe her down before walking her through the building. We walk past the feature stairs, wave to the concierge and hop in the elevators back to the 21st floor where our unit lies.



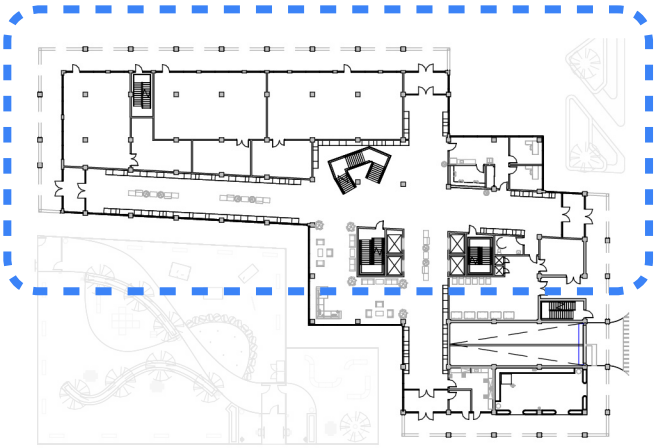


FIG 4.19 *[RIGHT]*

Key plan of the ground floor plan in Liberty Village.

Drawing Scale = 1:1000

North Building Entrance

Canine enrichment paths on each side of corridor.

Canine accessible feature stairs

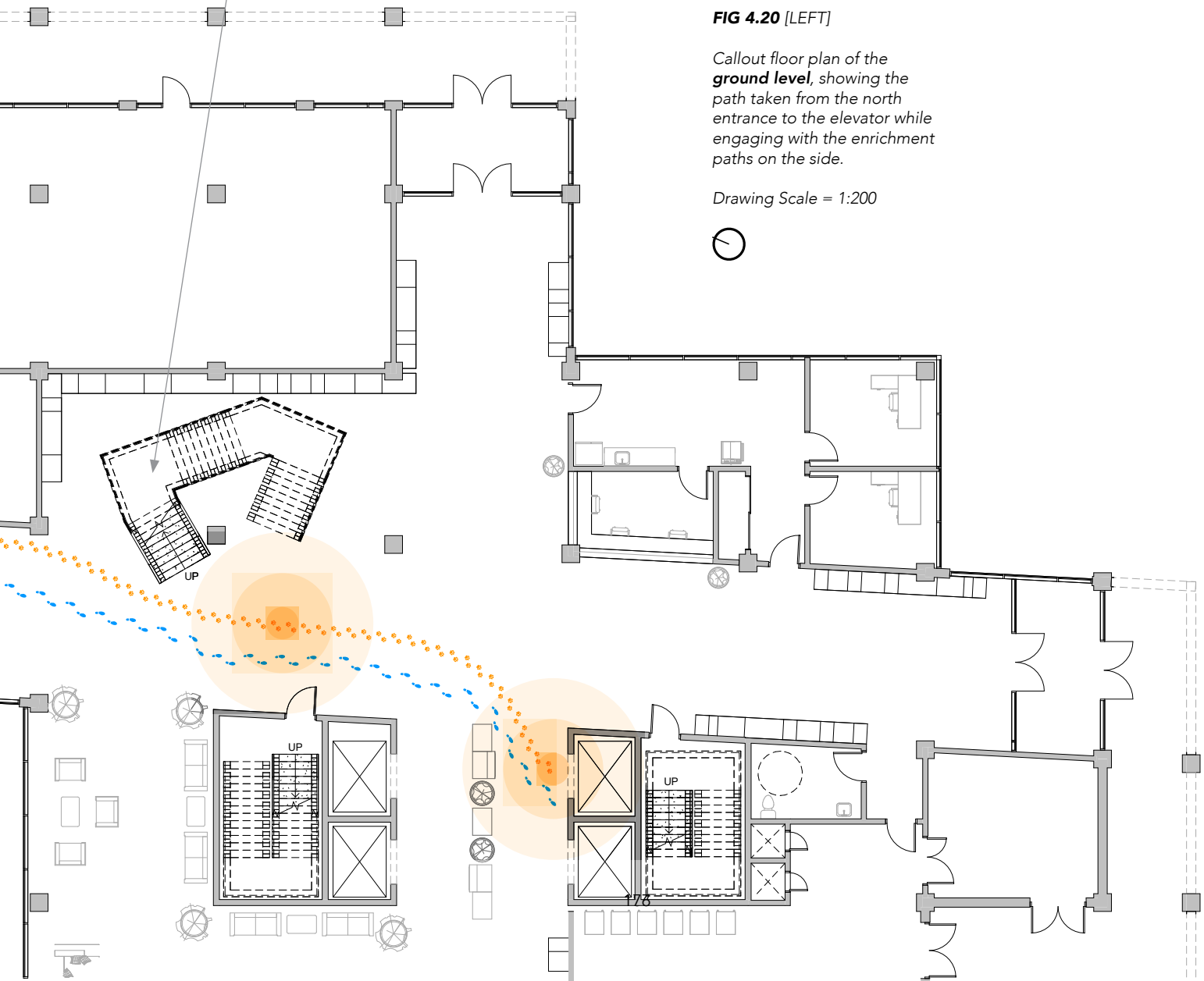


FIG 4.20 *[LEFT]*

*Callout floor plan of the **ground level**, showing the path taken from the north entrance to the elevator while engaging with the enrichment paths on the side.*

Drawing Scale = 1:200



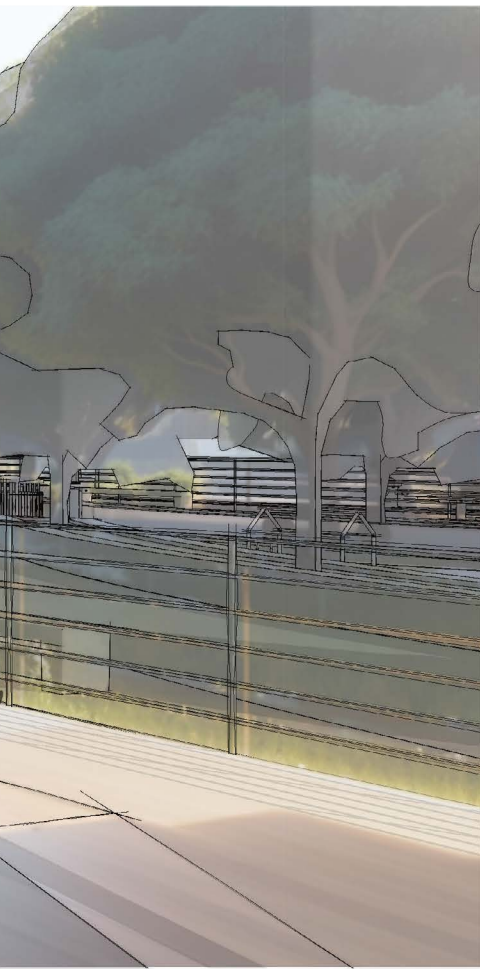


FIG 4.21 *[LEFT]*

Conceptual render of the ***main corridor*** *on* ***ground level*** *from the* ***west entrance****, featuring plenty of space for circulation, along with enrichment paths on each side for mental and physical stimulation.*



FIG 4.22 *[RIGHT]*

Conceptual render of the ***main corridor*** *on* ***ground level****, featuring the canine accessible feature stairs on the right.*

We walk in the unit and I let Truffles get settled down while I get ready for work. By 9:30am, I'm ready to leave for work, giving me 30 minutes to walk to Exhibition Go Station, hop on the train to Union, and then take a brief TTC ride to arrive at the office by 10am. The grind begins at work as I settle into my tasks and meanwhile, Truffles finds herself in her favourite sleeping spot beside the couch on the floor. Time goes on and she occasionally shifts napping locations back to ***her place****. When I find time during the day, I check my pet cameras back at home to see how she's doing. Around 1pm, I couldn't find her anywhere in the unit, so I knew right away that she wandered over to the balcony to get some fresh air and sunbathe. A little while later, she came back inside and continued napping on the couch.*

def'n. ***her place*** *//*

Doggy slang for dog bed. If there are multiple beds in different rooms, then each bed can be specified by location. For example, the dog bed in the office would be identified as "office place" or the dog bed in the living room would be the "living room place". However, if the living room place is the main dog bed, then there is no need to indicate the location, and instead is just referred to as "the place".

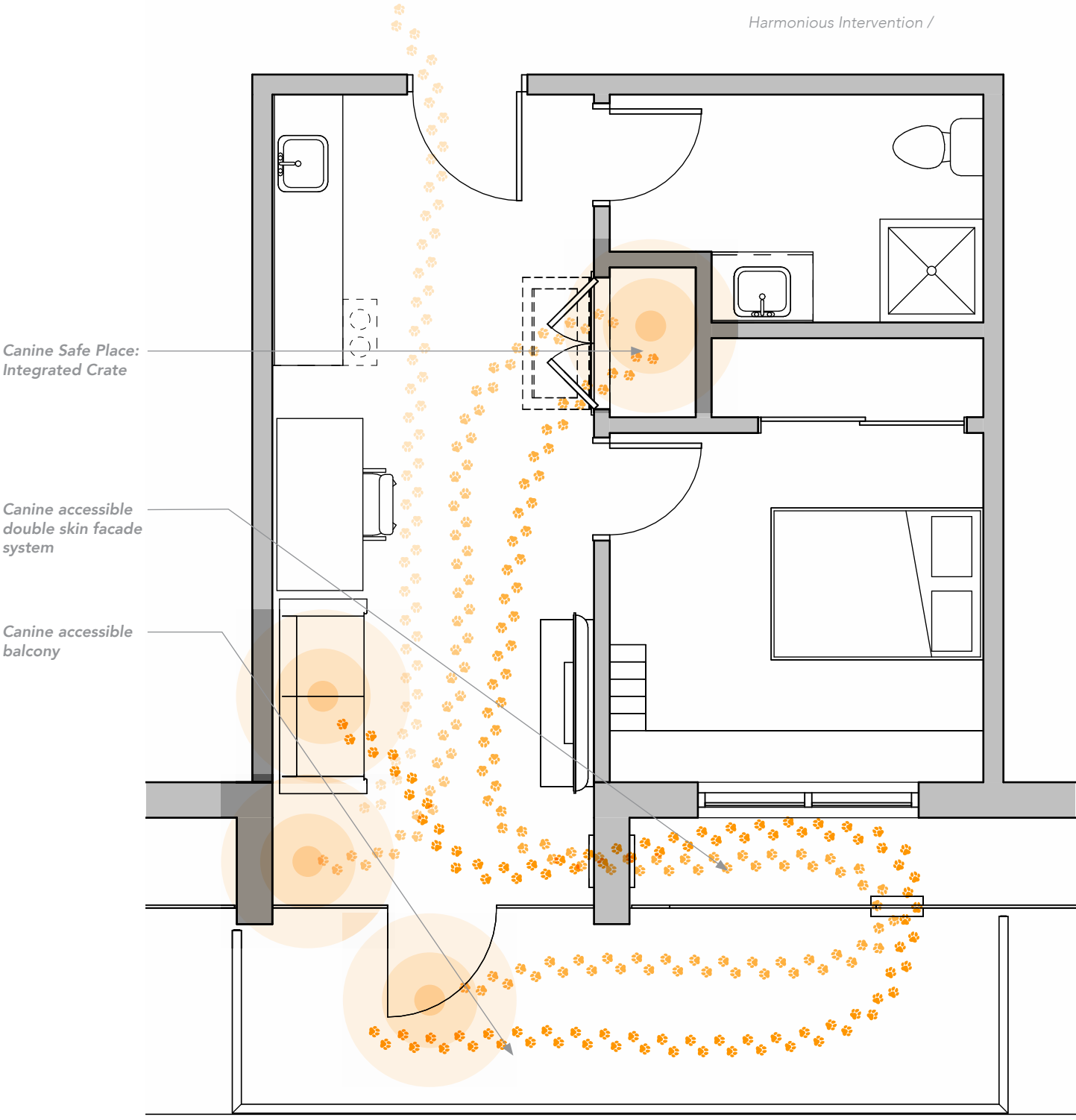
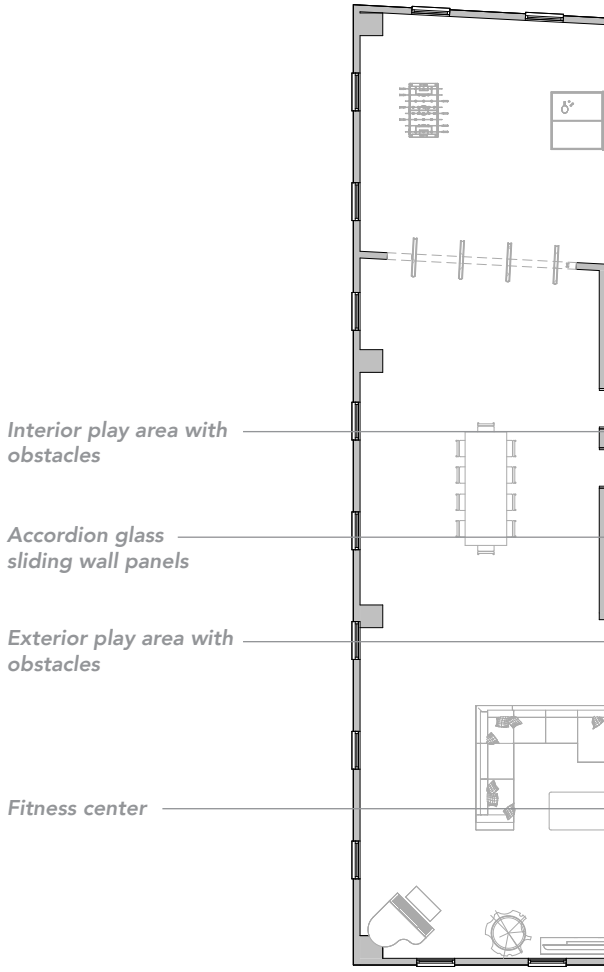


FIG 4.23 *[ABOVE]*

*Typical **residential coop unit**, showing the path taken by the dog during the day after coming back from their morning walk and left home alone while the owner goes off to work.*

Drawing Scale = 1:50



Some days I have the privilege of working from home. Working remotely has its perks, especially when I can squeeze in a quick gym session during my lunch break. Rather than leaving Truffles home alone, I bring her along to the recreational level where there's an Off-Leash Area (OLA) conveniently located next to the fitness center. It's one of the many canine facilities our building offers, including support from professional and qualified staff who supervise the OLAs during certain peak hours. This gives me peace of mind knowing Truffles can play safe and have fun while I work out, all within sight and under watchful eyes. As I hit the treadmill or lift weights, I steal glances at Truffles through the glass partition, seeing her play happily with her ***furriends****. It's a perfect arrangement that balances my personal activities with Truffle's exercise and socialization.*

def'n. ***furriends*** *//*

Doggy slang for other canine companions, whether new quaintanecs or old friends.

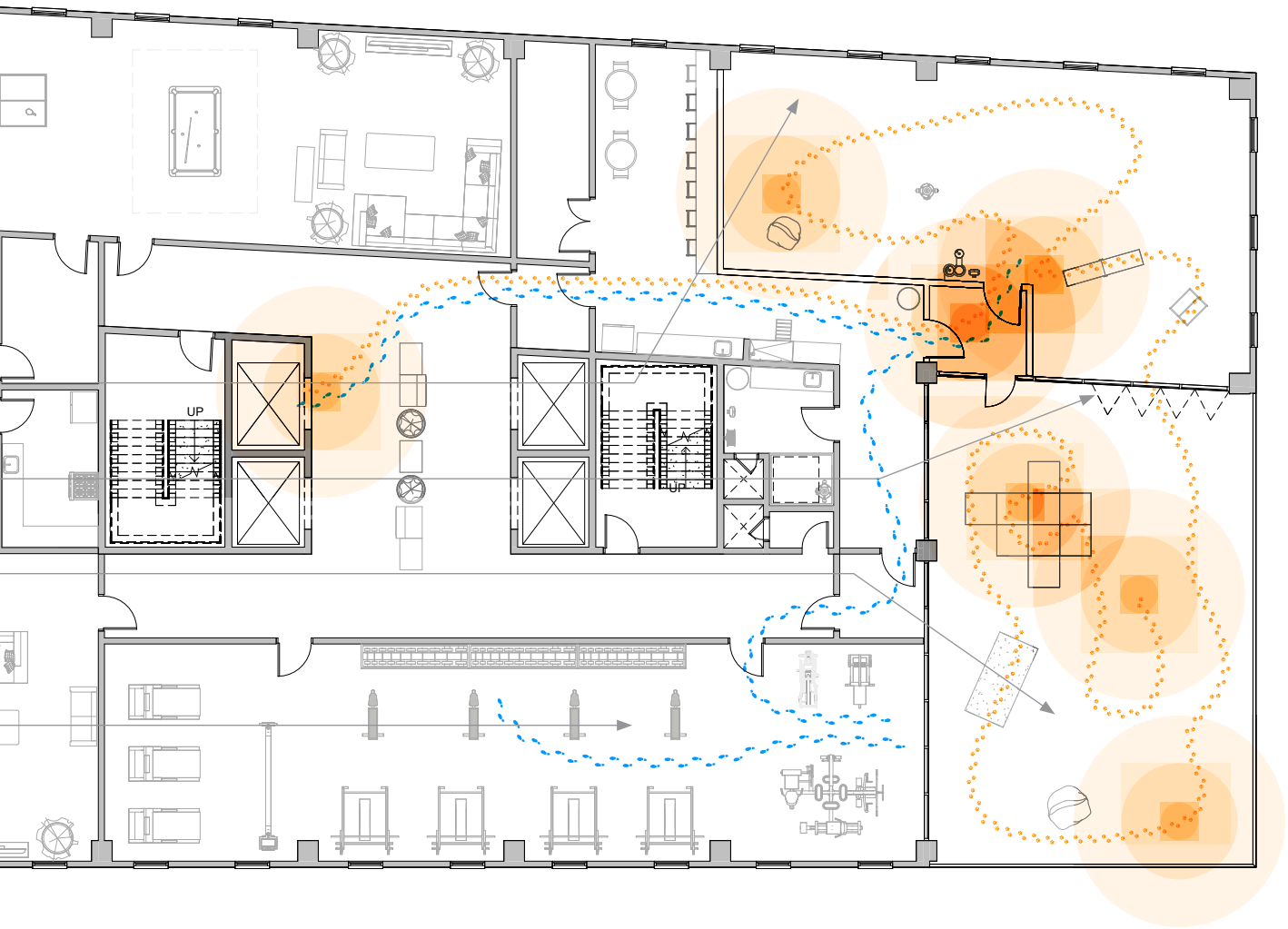


FIG 4.24 *[ABOVE]*

Typical ***recreational level*** *in the tower, showing the path taken by the dog when the owner is able to work from home and use the gym during their lunch break. This floor includes a fitness center, a party room, and an off-leash area for dogs.*

Drawing Scale = 1:200



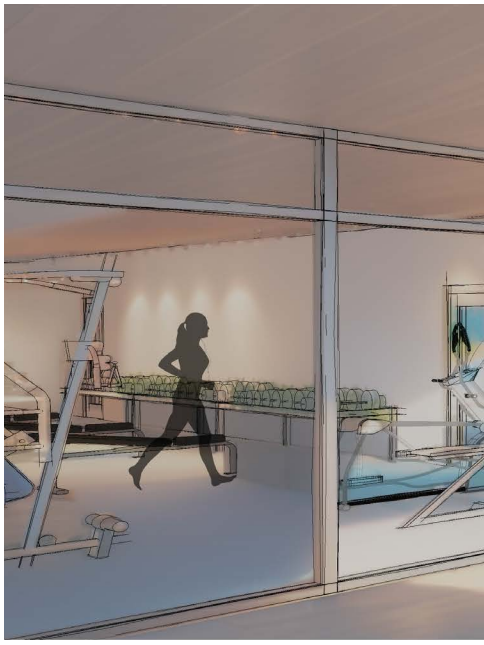


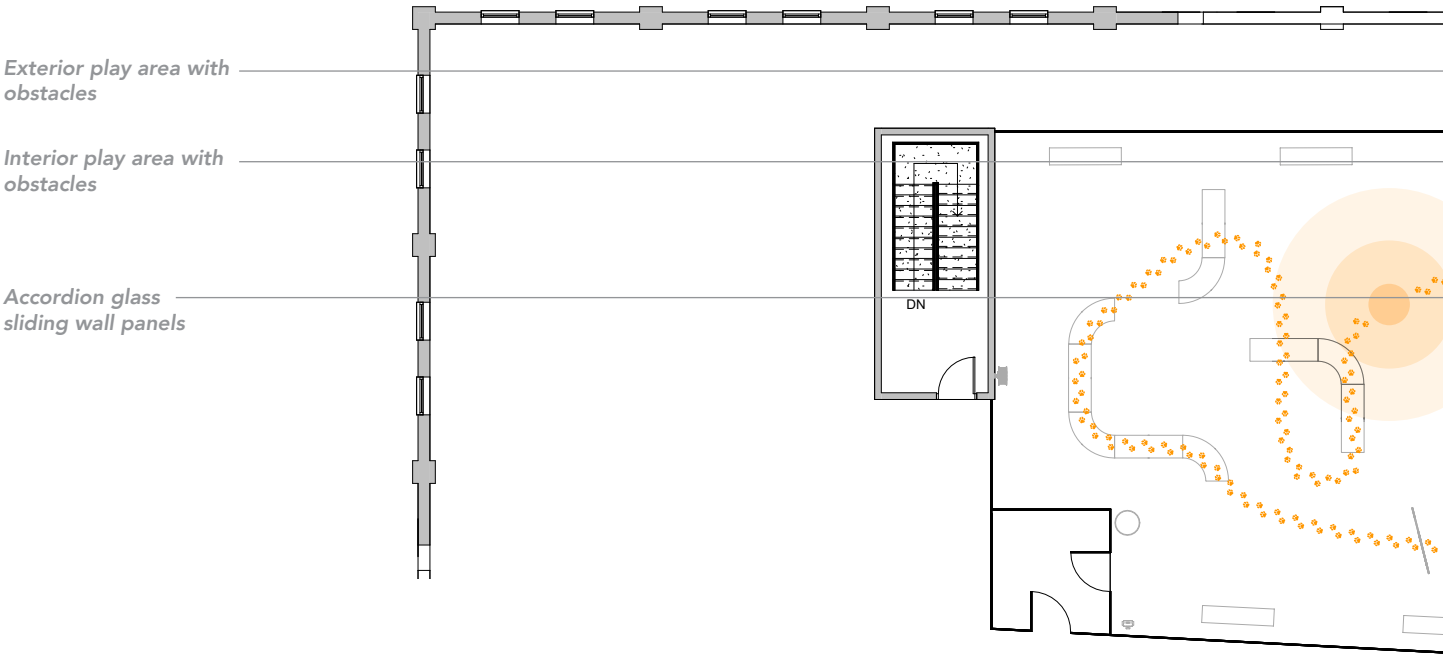
FIG 4.25 *[ABOVE]*

Conceptual render of the ***above grade off leash area (OLA)*** *on the r****ecreational level****, featuring a view from the entrance. As you walk in, you'll find the main seating area on the left that overlooks the OLA, and kitchenette and washing stations on the right.*



FIG 4.26 *[ABOVE]*

Conceptual render of the ***above grade off leash area (OLA)*** *on the* ***recreational level****, featuring a view of the outside play area. The space is equipped with abundant agility equipment and obstacles, complemented by sliding accordion glass panels that can open and close to create a seamless indoor-outdoor transition, adapting to different weather conditions.*



This day took an unexpected turn when work demanded I stay late, throwing my usual routine off course. Normally, by this time, I'd be home, leash in hand, ready to take Truffles for her afternoon walk. But deadlines and meetings conspired against me, keeping me chained to my desk well past the usual 5:30pm rush. Frustrated and concerned for Truffles, I remembered the unique support our condominium offered for pet owners. Without hesitation, I called Steve, our reliable concierge and friend, and arranged for their in-house dog walking service. It's a thoughtful support service where a qualified staff member fetches your dog from our unit with a master key and takes them to the private rooftop Off-Leash Area (OLA). Knowing Truffles would be safe and cared for, able to play, get her energy out and do ***her business****, I focused on my work without any guilt of leaving her alone. It's moments like these that make me grateful for our condominium's commitment to supporting our canine companions, ensuring their health and well-being even when life gets in the way.*

def'n. ***her business*** *//*

Doggy slang for the act of urinating (pee) or defecating (poo). This can be used interchangeably for both these actions.

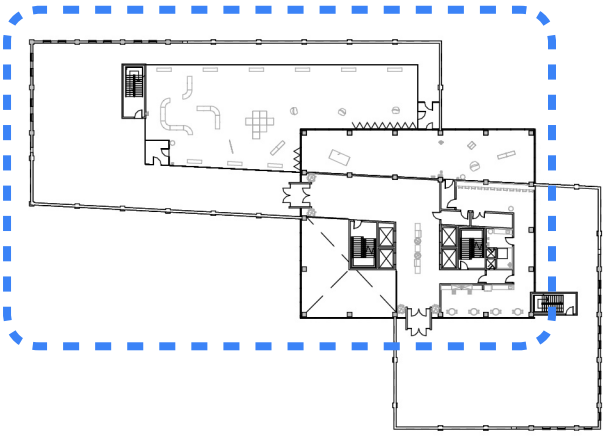


FIG 4.27 *[LEFT]*

Key plan of the podium rooftop ***level 3 floor plan*** *in Liberty Village.*

Drawing Scale = 1:1000

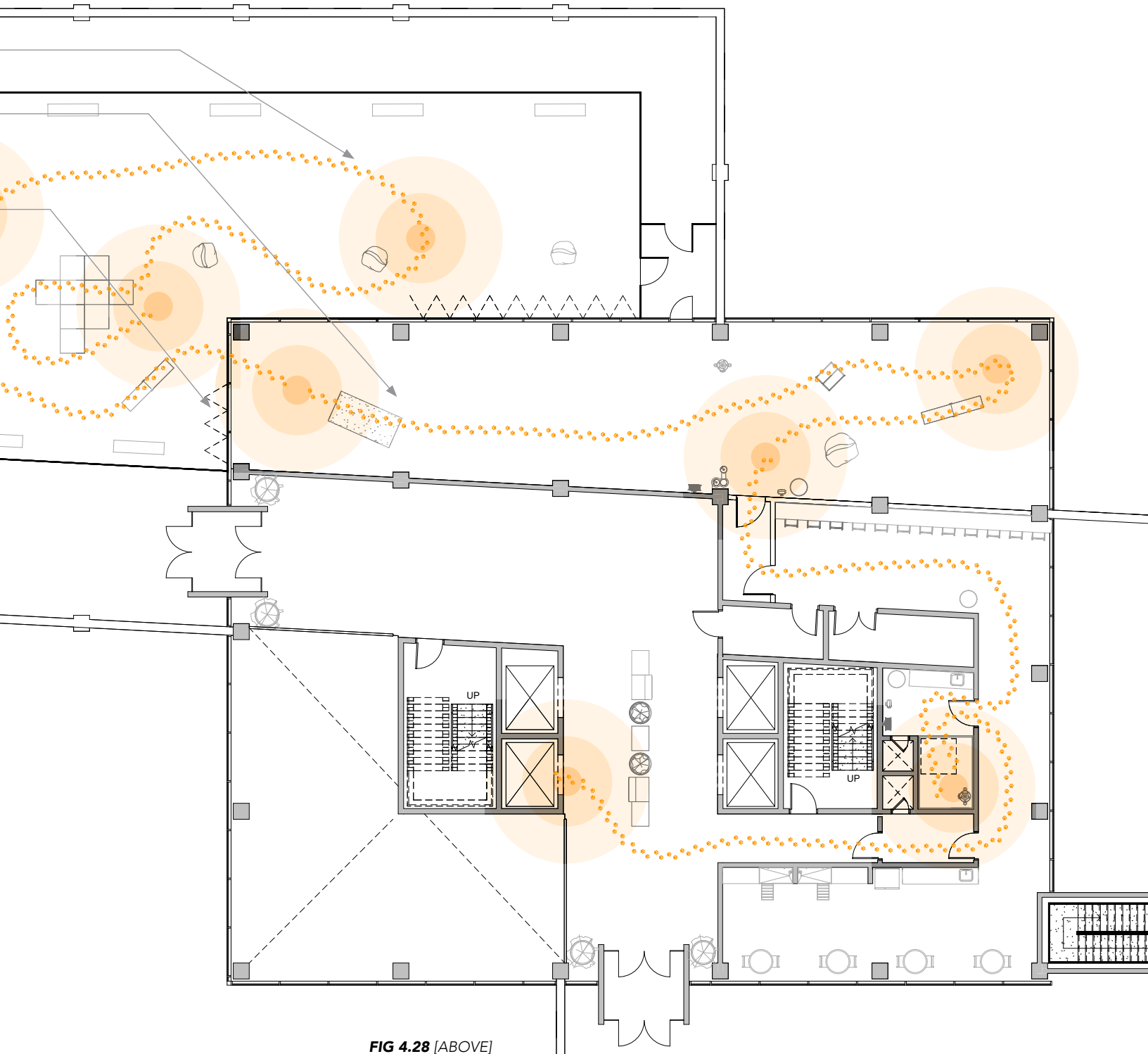


FIG 4.28 *[ABOVE]*

Callout floor plan of the **3rd level *(rooftop podium)***, *showing the path taken from the elevator by a dog to utilize the above grade off leash area (OLA). As a more private and personal play option only available for the building tenants, the in-house dog walking service utilizes this space to exercise dogs.*

Drawing Scale = 1:200





FIG 4.29 *[LEFT]*

Conceptual render of the ***above grade off leash area (OLA)*** *on the* ***3rd level****, featuring the secondary entrance to the room. As you enter, you'll find the kitchenette and dog washing station area on the right, and the OLA towards the left.*



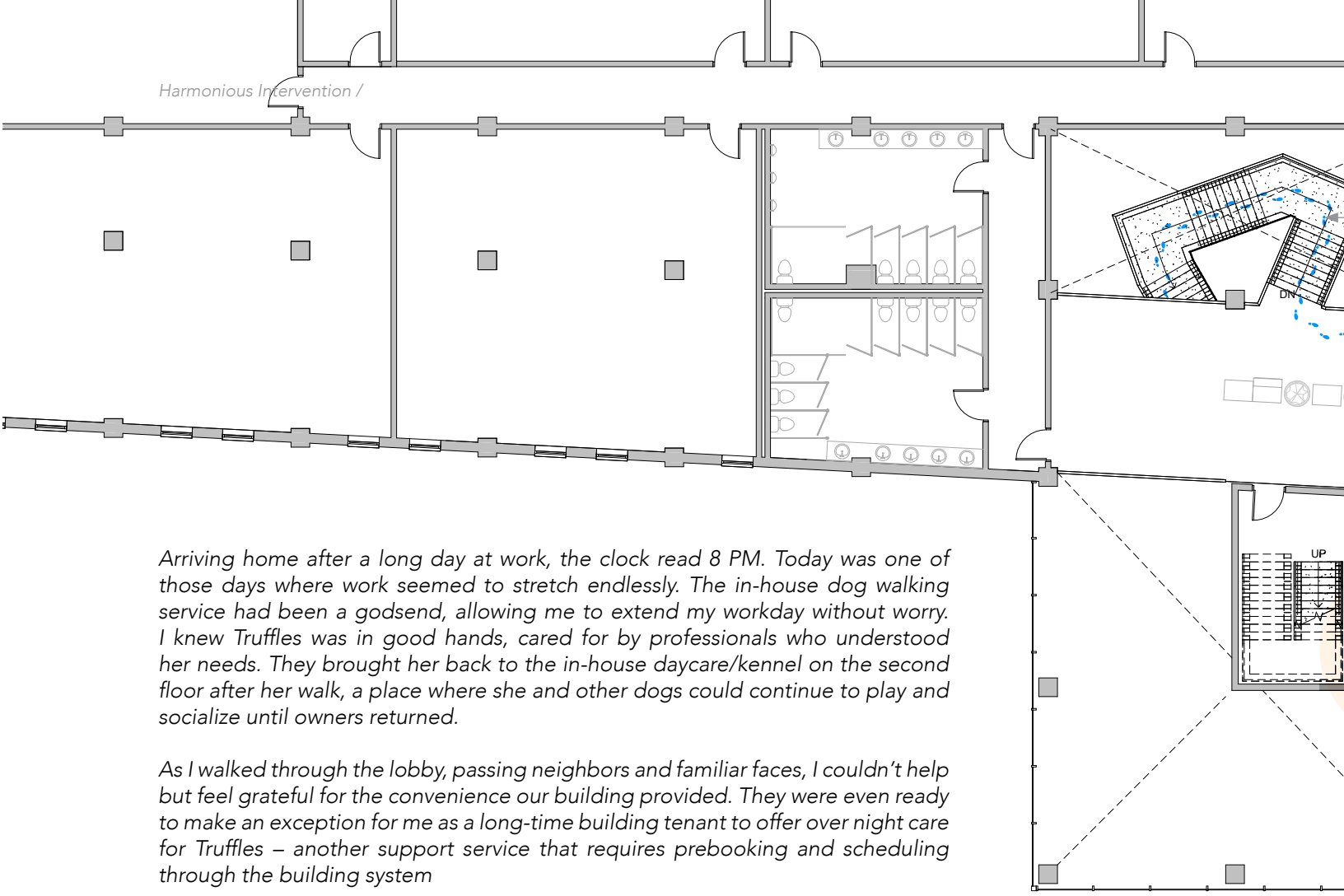
FIG 4.30 *[LEFT]*

*Conceptual render of the a**bove grade off leash area (OLA)** on the **3rd level**, featuring the primary entrance to the room. As you enter, you'll find the play area entrance on the left with the seating area in front that overlooks the play area. With plenty of obstacles, toys and agility equipment available for use, the play area offers a length size to allow for optimal indoor fetch if desired.*



FIG 4.31 *[ABOVE]*

*Conceptual render of the a**bove grade off leash area (OLA)** on the **3rd level**, featuring the outdoor portion of the play area. Since this space is located on the podium roof top, it has been set back from the building edge for safety and is only accessible to building tenants to offer a more private option for play. There are accordion glass panel doors that can open to create a seamless transition between the interior and exterior play areas when weather permitting.*



Arriving home after a long day at work, the clock read 8 PM. Today was one of those days where work seemed to stretch endlessly. The in-house dog walking service had been a godsend, allowing me to extend my workday without worry. I knew Truffles was in good hands, cared for by professionals who understood her needs. They brought her back to the in-house daycare/kennel on the second floor after her walk, a place where she and other dogs could continue to play and socialize until owners returned.

As I walked through the lobby, passing neighbors and familiar faces, I couldn't help but feel grateful for the convenience our building provided. They were even ready to make an exception for me as a long-time building tenant to offer over night care for Truffles – another support service that requires prebooking and scheduling through the building system

Heading up to the second floor, I found Truffles eagerly awaiting me with her ***nubbin*** *wagging in excitement. I guess Steve, the concierge, phoned the daycare front desk that I was walking up, so they got Truffles ready to greet me. It was pleasant surprise. She had spent the evening playing with her* ***furriends****, no doubt enjoying the social interaction and activity. It warmed my heart to see her happy and content, despite my late return.*

Together, we made our way down the feature stairs, passed the front reception desk to say good night to Steve, and then up the elevator to the 21st floor where home awaits.

def'n. ***nubbin*** *//*

Doggy slang for Truffles docked-off tail. After the breeders removed her tail at birth, it left a little "nubbin" that still wags when she gets excited.

def'n. ***furriends*** *//*

Doggy slang for other canine companions, whether new quaintanecs or old friends.

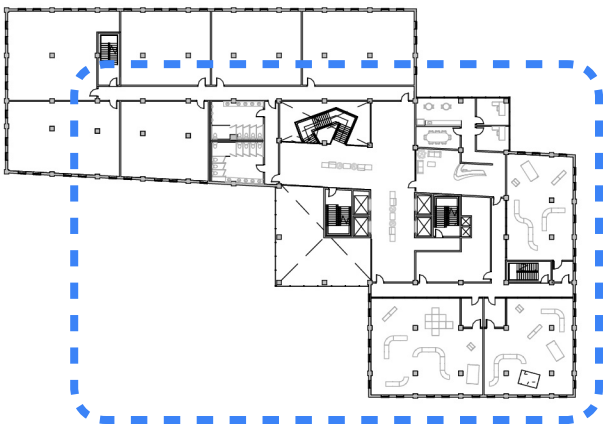


FIG 4.32 *[LEFT]*

Key plan of the ***level 2 floor plan*** *in Liberty Village.*

Drawing Scale = 1:1000



FIG 4.33 *[LEFT]*

*Callout **floor plan** of the **2nd level**, showing the path taken by the dog to enter the in-house doggy daycare play room, before being brought to the front reception desk by employees to be picked up. This in-house daycare is just one of many canine facilities to help support the building tenants as well as the surrounding community.*

Drawing Scale = 1:200



FIG 4.34 *[LEFT]*

Conceptual render of the ***ground floor level****, featuring the landing of the canine accessible* ***feature stairs****.*



FIG 4.35 *[RIGHT]*

Conceptual render of the ***second level in-house doggy daycare****, featuring one of the play areas. There are 3 different play areas, each equipped with obstacles and agility equipment to cater to different sized dogs.*





FIG 4.36 *[LEFT]*

Conceptual render of the ***second level public corridor****, featuring lots of space for circulation and a railing overlooking the atrium lobby.*

*Finally, back home at last, Truffles went to **her place** and waited for her **evening chow time**. I prepped it as usual, signalled her to go get it once I finished and she excitingly ran to eat after a long day of playing. I took this time to unpack my work bag and unwind. By the time Truffles finished eating, she noticed me rolling out her favorite carpet across the living room floor—a sure sign that playtime was about to begin. For the next 30 minutes, we engaged in our nightly routine of indoor fetch and training exercises, before transitioning into our sleep routine.*

def'n. ***her place*** *//*

Doggy slang for dog bed. If there are multiple beds in different rooms, then each bed can be specified by location. For example, the dog bed in the office would be identified as "office place" or the dog bed in the living room would be the "living room place". However, if the living room place is the main dog bed, then there is no need to indicate the location, and instead is just referred to as "the place".

def'n. ***evening chow time*** *//*

Doggy slang for dinner, which includes food and water.

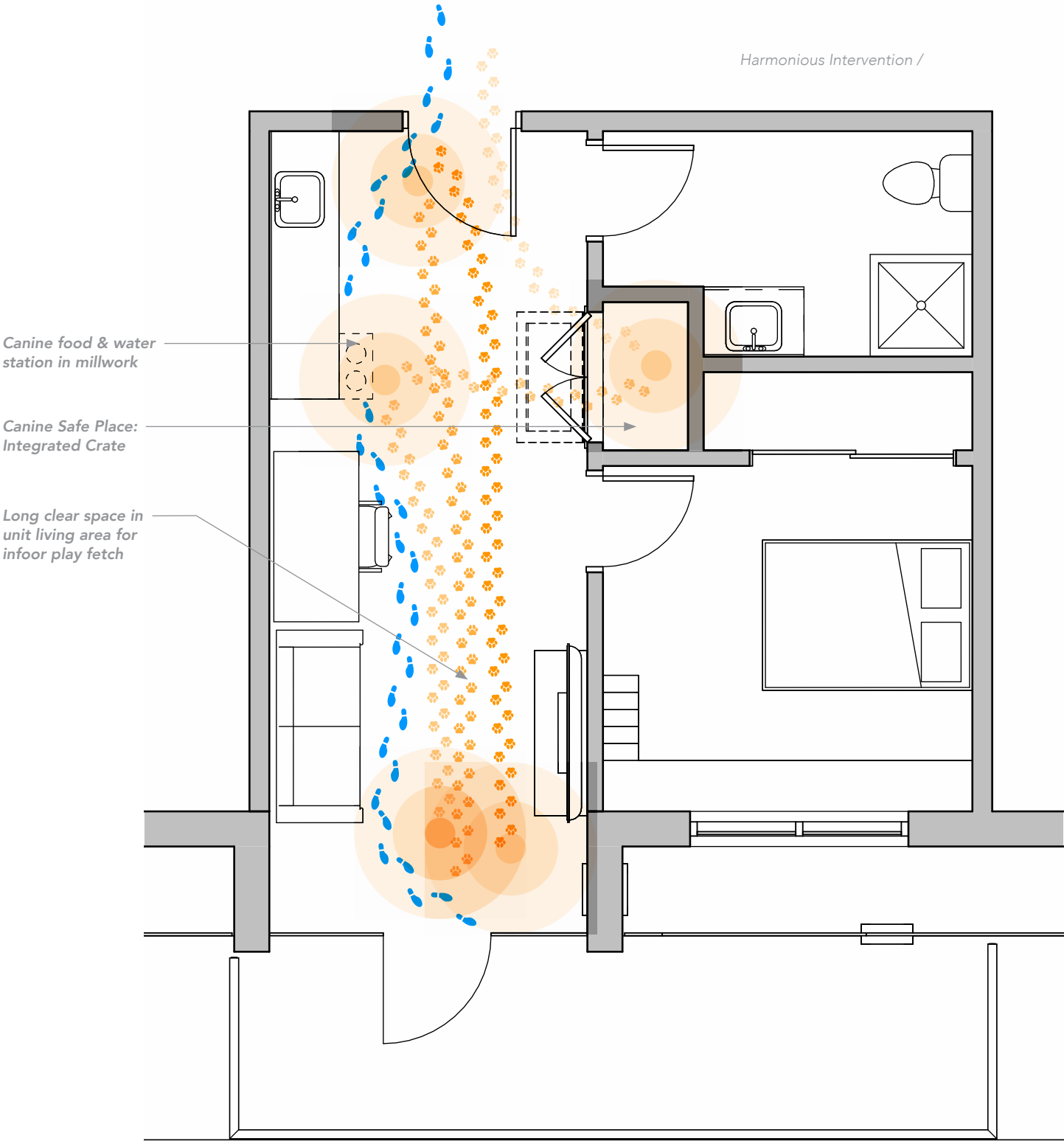


FIG 4.37 *[ABOVE]*

*Typical **residential coop unit**, showing the path of the dog after being brought back home after a long day from daycare.*

Drawing Scale = 1:50

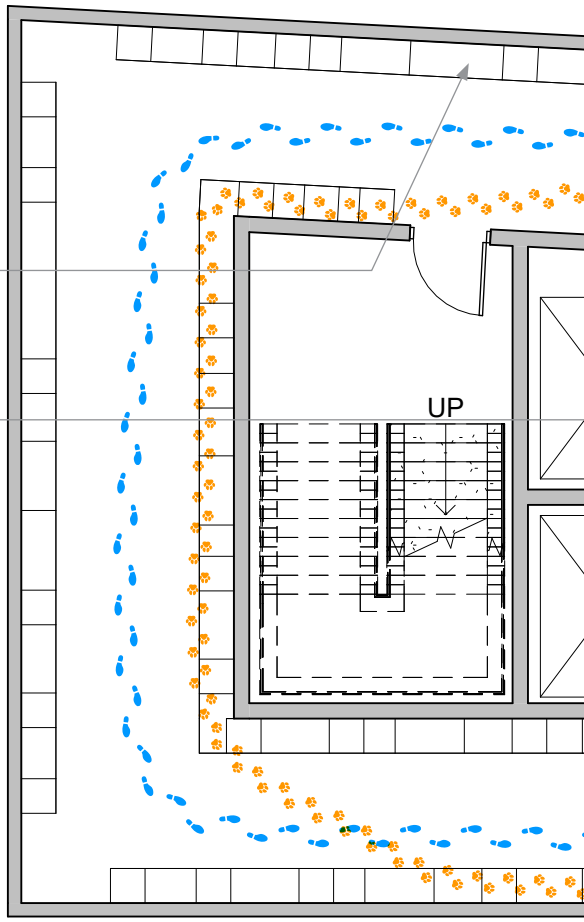


FIG 4.39 *[RIGHT]*

*Callout **floor plan** of the **typical tower residential coop level**, showing the path taken in the evening for the nighttime routine. The designated pet relief area around the corner offers convenience and support for the building tenants.*

Drawing Scale = 1:50

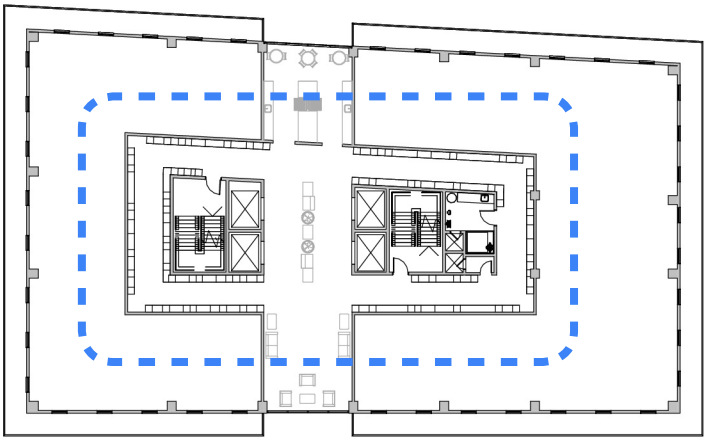
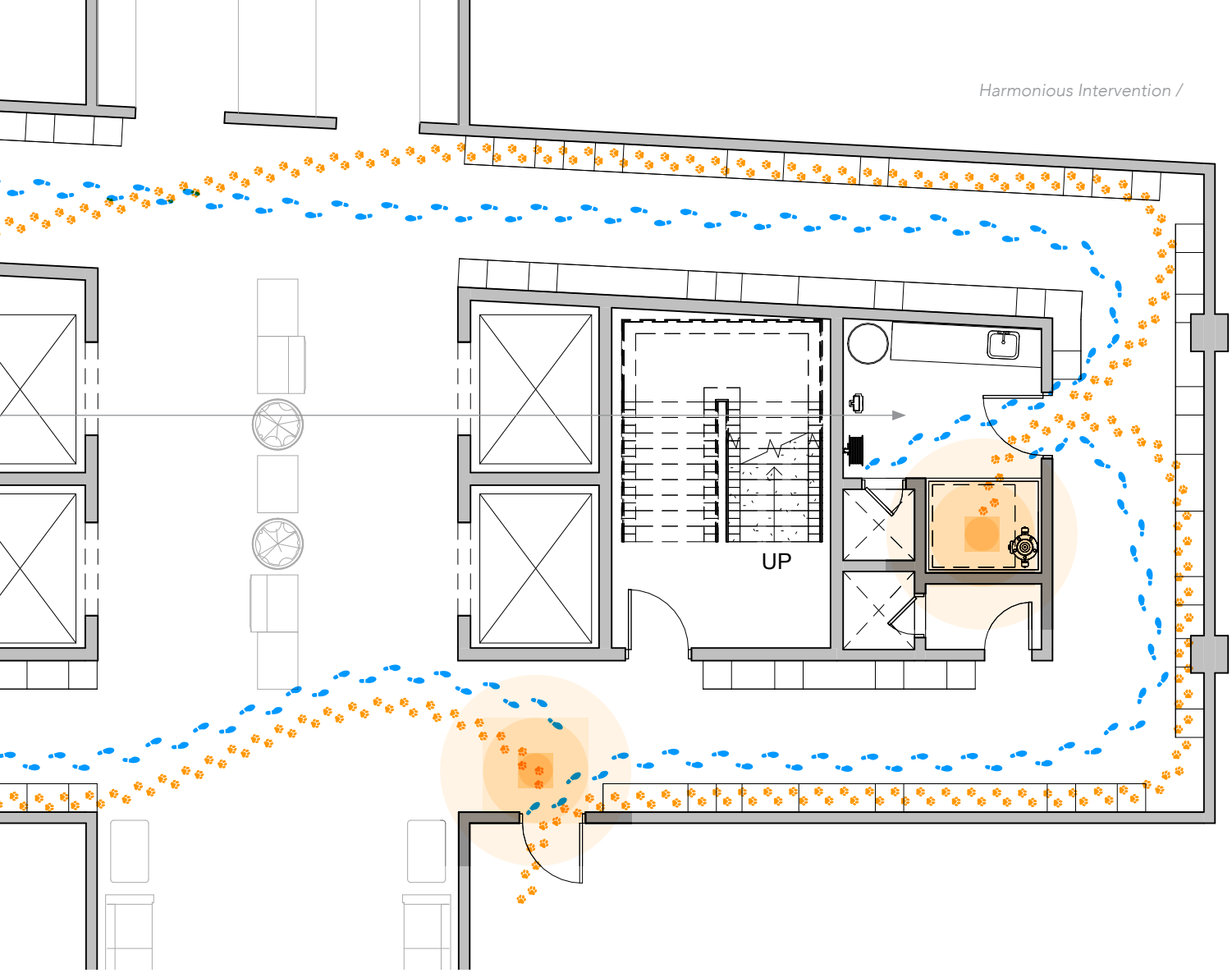


FIG 4.38 *[LEFT]*

*Key plan of the **typical tower residential floor plan** in Liberty Village.*

Drawing Scale = 1:500



def'n. ***her business*** *//*

Doggy slang for the act of urinating (pee) or defecating (poo). This can be used interchangeably for both these actions.

Before we call it a night and head to bed, I take Truffles out one more time to allow her to relieve herself. Thankfully, I don't need to trek down 21 storeys for this because of the designated pet relief area just around the corner of the hallway. I put the leash on Truffles and we make our way to the relief room. If one of our neighbors was already using the space, we'd wait patiently outside as a courtesy, but tonight the room was empty. She goes on the relief area in the corner of the room, does ***her business*** *and then we head back to our unit. True to herself, Truffles always insists on taking the scenic route. Instead of heading straight back, we looped around the hallway, giving her a chance to run along the enrichment paths one last time before bed. Finally, with her energy spent and her needs met, we returned to the unit, ready to settle in for the night.*





FIG 4.40 *[LEFT]*

Conceptual render of the ***elevator waiting area*** *on a typical* ***tower floor****, featuring plenty of lounge space for building occupants.*

*Back in the room, she hops on **her night-night**, and I give her one last pat on the head. She looks at me with her big, soulful eyes, and I'm reminded of why I love being her best friend. It's the little moments like these that make everything worthwhile.*

I freshen up in the washroom after a long day of work and brush my teeth. As I climb into bed, I reflect on the day. Life in the city can be hectic and overwhelming, but having Truffles by my side, along with the building's exceptional facilities and services, makes it not only manageable but also enjoyable. I shut off the lights as I drift into the dream world, knowing that tomorrow will bring more adventures and moments to cherish.

def'n. ***her night-night*** *//*

Doggy slang for the place she deems her bed to sleep in. It started with her dog bed in her crate when she was younger, but eventually became my queen sized bed. The choice is left to her every night where she wants to sleep.

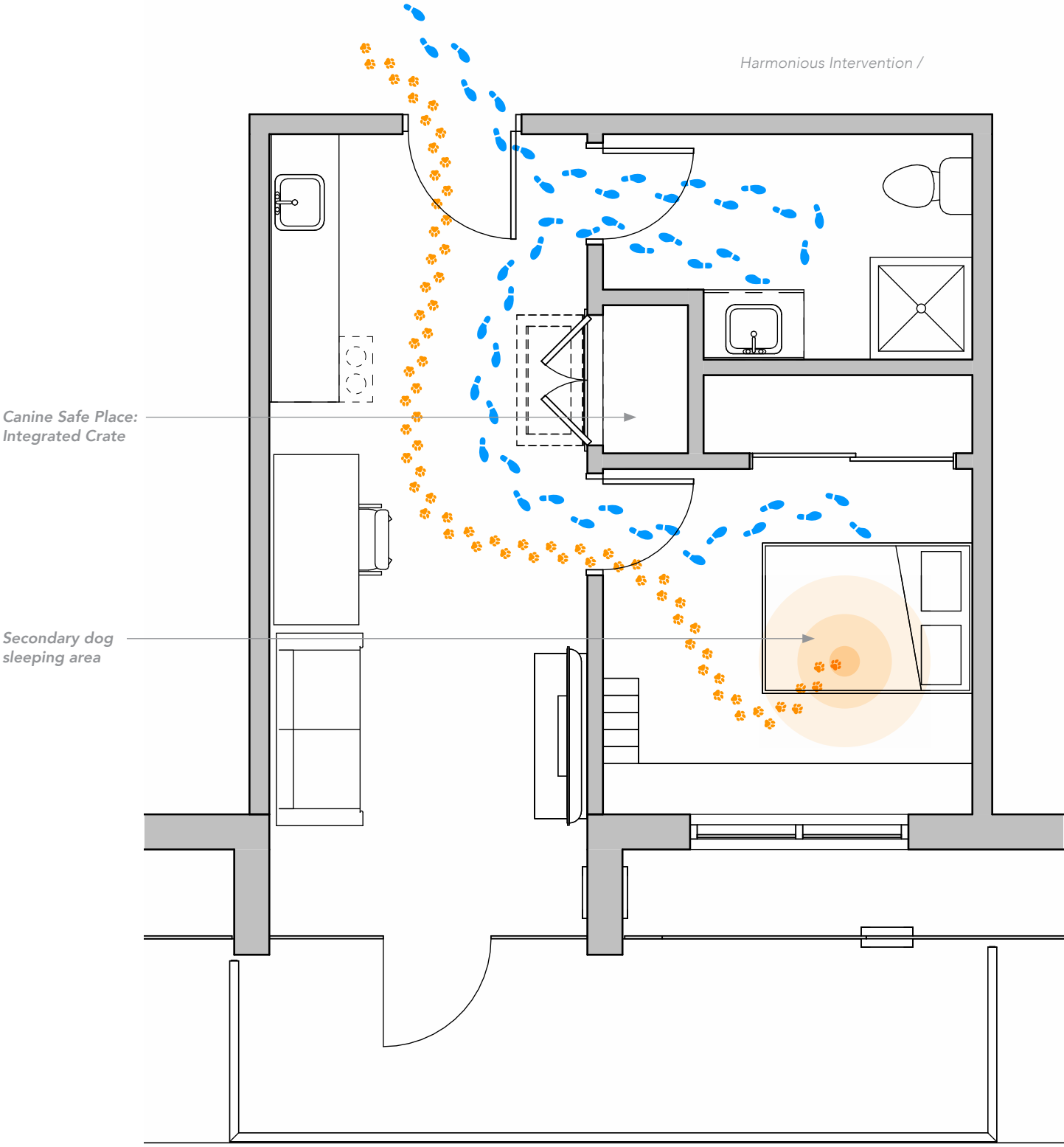


FIG 4.41 *[ABOVE]*

*Typical r**esidential coop unit**, showing the path taken at the end of the night after completing the finally potty.*

Drawing Scale = 1:50





CHAPTER 5.0

NEXT STEPS

CONCLUSION

WHY DOGS?

Over 10000 years ago, homo sapiens began to appear as more nomadic beings, expanding and creating settlements where they can. It's been theorized that the natural waste produced by these new communities and villages led to the first interactions between human kind and canine, beginning their journey of domestication. As a result of natural selection, the wolves brave enough to scavenge and feast in these human settlements food waste piles proved to be unafraid and superior to the rest. Time progressed and humans became more tolerable to their kind as the calmer and braver wolves in the wild would gravitate towards the edge of human society. Sometime pups would be taken in as pets or (sadly) as meat but eventually the nice ones would be continuously bred. (Horowitz 2016)

Looking at the present-day dog, scientists can chalk up their level of social status in society to natural selection, but the fact of the matter is that there is more to it than that. Since dogs and humans are social creatures, we were able to find a harmony to coexist with each other above all other species. But why dogs? Why are dogs, amongst all, the chosen one to be (hu)man's best friend? The answer is simple. They're diurinal, a good size, have familiar body parts, experience similar movement patterns, are manageable, have non complicated feeding requirements, are trainable, readable, resilient, reliable, have a scaled lifetime to humans, and possibly most importantly, they're simply just cute. (Horowitz 2016)

THE PROCESS

I embarked on this journey in 2017 when I entered the profession, and it took an unexpectedly wonderful turn three years ago when I got my dog, Truffles. She transformed my life, deepening my love and care for animals. Constantly curious about her behaviors, I strive to understand her better to ensure she has the best life possible. While I am undeniably a dog lover at heart, I am also a dedicated designer and aspiring architect. My boss and mentor instilled in me the importance of asking the right questions and seeing what others might overlook. This insight inspired me to combine my two passions: architecture and dogs.

The ultimate objective was to craft a canine-inclusive design guide for dense urban cities by reimagining high-rise residential architecture in North America. This initiative seeks not only to raise awareness about the significance of dogs in our communities but also to offer insights into a dog's unique perspective (their 'umwelt'). By understanding their needs, behaviors, and well-being, readers can enhance their ability to care for and train their beloved pets. However, addressing the diverse demographics of dogs posed a challenge. With hundreds of registered breeds, varying ages, sizes, health conditions, and roles (such as support, working or service animals), how can we create a comprehensive guide that caters to all?

In response to this question, I narrowed my focus towards the dog that comprises of the majority – the everyday city dog. However, even within this category, there still exists a wide variety of city dogs. So to address this diversity, it made sense to delve into the behavioral psychology and physiological limitations as a scientific and credible way of analyzing the canine umwelt. This allowed me to establish a solid foundation for creating a practical and effective design guideline that promotes inclusivity for our furry companions.

Building upon this secondary research, I was able to draw from my personal experience and employ primary methods of analyzing Truffles through ethogram studies to deepen my understanding of the canine umwelt of a typical city dog. Armed with this knowledge, I crafted a comprehensive design guideline that outlines practical best practices for adoption in new construction or renovation projects. To illustrate that these base design standards can be implemented in a fun, exciting and playful way, I developed a conceptual design in Liberty Village that fully embraces canine inclusivity.

COST VS FEASIBILITY MATRIX

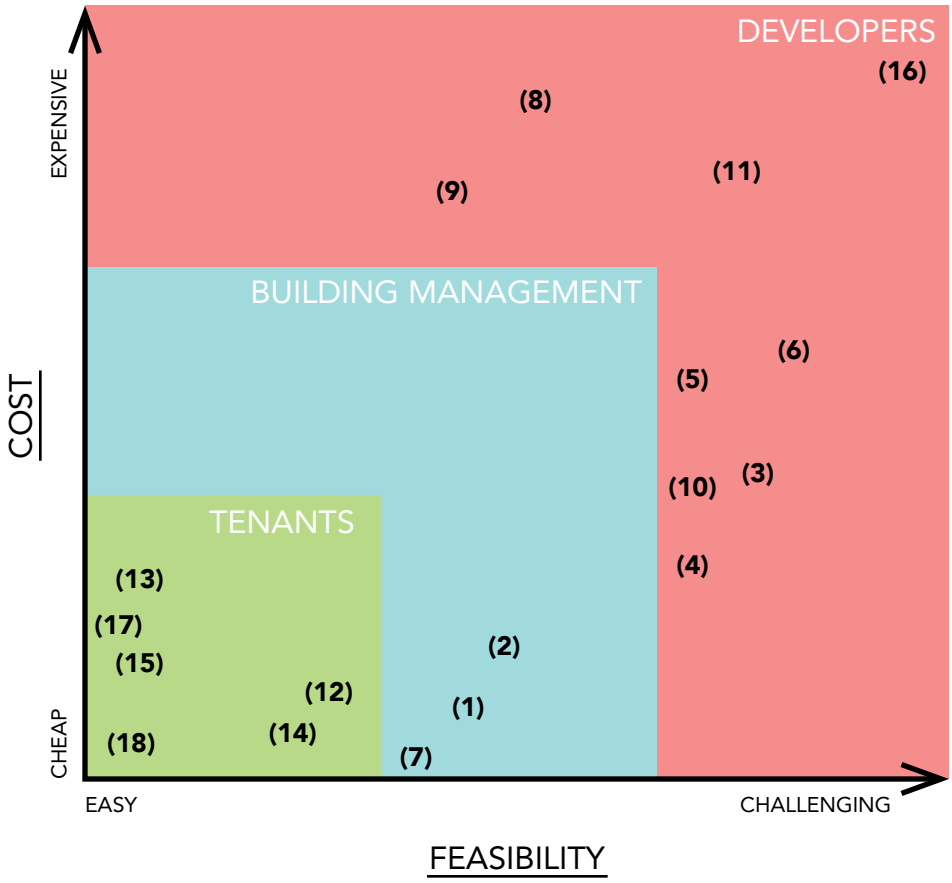


FIG 5.1 *[LEFT]*

Matrix to breakdown the feasibility and cost analysis for each individual proposed design intervention in this guideline.

BUILDING SCAPE AT GRADE:
(1) A.3.2.1.1 - Entrance
(2) A.3.2.1.2 - Elevators
(3) A.3.2.1.2 - Egress & Convenience Stairs
(4) A.3.2.1.4 - Corridors
(5) A.3.2.2 - Cleaning Spa
(6) A.3.2.3 - Pet Relief Area
(7) A.3.2.4 - Commercial Support Spaces
(8) A.3.2.5.1 - POPS: Off Leash Area (OLA) Dog Park
(9) A.3.2.5.2 - POPS: Canine Accessible Landscaping

BUILDING SCALE ABOVE GRADE:
(10) B.3.2.6 - Interior Pet Relief Areas
(11) B.3.2.7 - Interior Off Leash Areas (OLA)

UNIT SCALE:
(12) C.3.3.1 - Entrance Mud Space
(13) C.3.3.2 - Food & Water Station
(14) C.3.3.3.1 - Safe Zone
(15) C.3.3.3.2 - Window Sill Seating Ledge
(16) C.3.3.4 - Self Accessible Balconies
(17) C.3.3.5.1 - Expanded Interior Circulation
(18) C.3.3.5.2 - Play Areas

FEASIBILITY VS COST

While the proposed interventions in this design guideline offer a wide range of opportunities, the reality is that feasibility is often driven by costs. If something is too expensive, it is unlikely to be implemented. In an ideal world, all buildings would be canine-inclusive, but we are not there yet. However, this does not mean we cannot start making changes. The matrix in Figure 5.1 breaks down the best practices in this guide, categorizing interventions based on their costs and identifying who is responsible for these expenses. This helps highlight which canine-inclusive design practices can be implemented today.

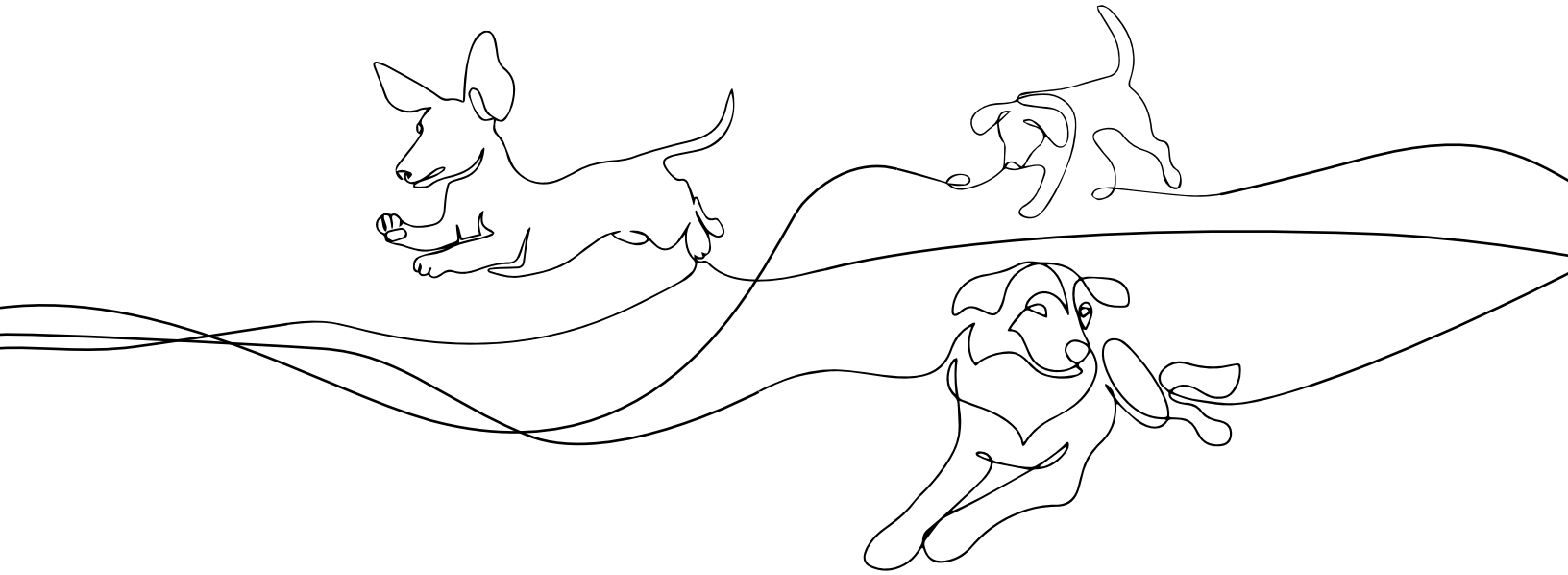
MOVING FORWARD

In this intricate dance of coexistence, dogs have woven their way into our lives. Their eyes reflect our shared journey in life and we must recognize their beauty, their intelligence and the symphony of their wagging tails.

As the canine population surges, society stands at a crossroad. Our cities, designed for humans, seems to be struggling to accommodate these four-legged souls. Yet, within this challenge lies an opportunity—a chance to shape a brighter future not only for us, but for our canine companions. And this begins by expanding our understanding of their umwelt to bridge the gap between species. Dogs have become an integral part of society, and the reality is that we share this world with them. As the future unfolds, it is our responsibilities as architects and designers to understand our current world and make a positive difference in it. In conclusion, this thesis is just another small step taken in history – a mere scratch on the surface – as we strive to harmonize the relationship between humankind and our loyal canine companions.







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PRELUDE

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CHAPTER 1.0

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FIG 5.2 *[RIGHT - FACING]*

Picture of Truffles smiling in the hands of his owner.

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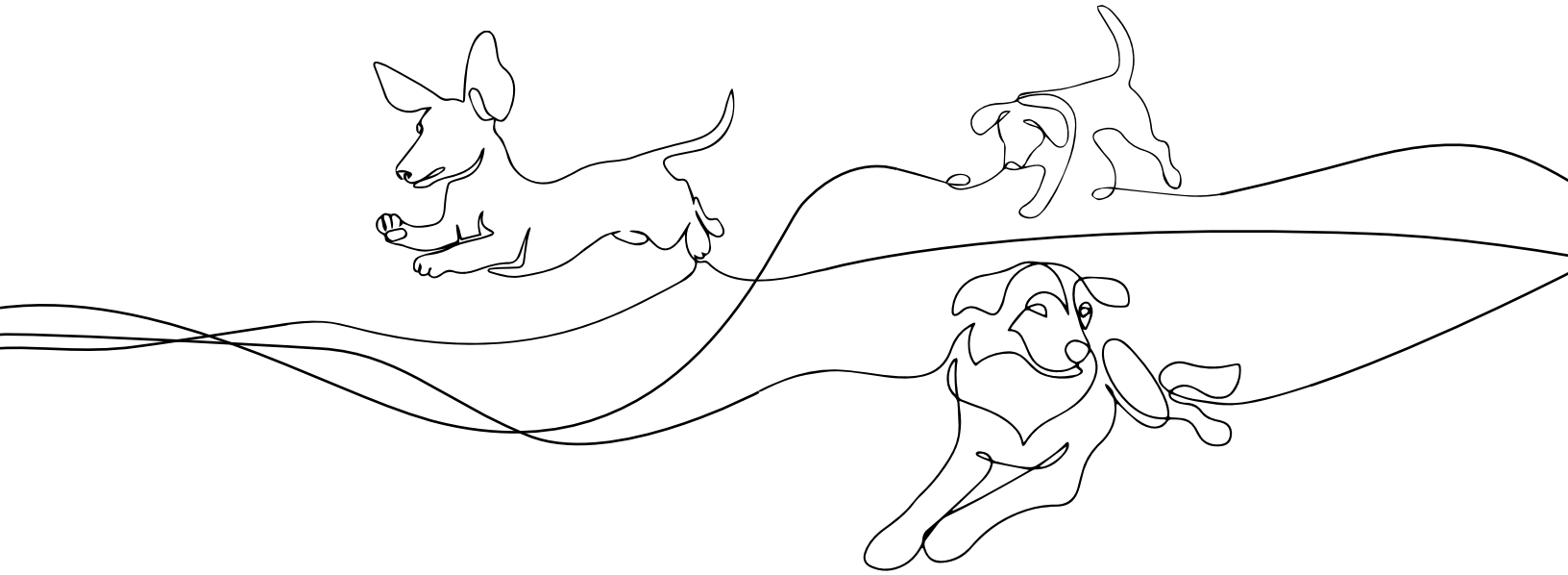
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Appendix

FOR REFERENCE

Analysis Number

Social Interaction Analysis

Behaviour Measurement

Tally up how many times your dog initiates or receives an interaction with others and once you get a total on each end, you will learn if they are leaders or followers; extroverts or introverts; players or loners.

INITIATOR		RECEIVER	
My Dog - Other Dog	My Dog - Human	Other Dog - My Dog	Human - My Dog

Total Receiver = _____ Total Initiator = _____

SUBJECT INFO

Name/Age: _____

Breed: _____

Gender: ☐ male ☐ female

Rescue: ☐ yes ☐ no

ANALYSIS INFO:

Context: _____

Location: _____

Date: _____

Weather: _____

Time Start-End: _____

Time Duration[1]: _____

Keeping track of measureable data can help better understand behavioural habits. Once you complete multiple analyses, you will begin to isolate behavioural patterns and can start asking the question of "why" something is occuring. The following matrix has preset basic actions your dog will preform, but feel free to add more in the blank spaces if your dog is doing something not already listed.

ACTION	FUNCTIONAL CATEGORY	FREQUENCY[2] *(tally up)*	RATE *(frequency[2]/time[1])*	INTENSITY *(how difficult is it to stop the action?) 5 = most*				
				1	2	3	4	5
Barking	Communicative Behaviour							
Eat Grass	Foraging Behaviour							
Growling	Communicative Behaviour							
Humping	Reproductive Behaviour							
Meeting other Dog	Play Behaviour							
Pee	Bodily Function							
Poo	Bodily Function							
Run	Play Behaviour							
Stop and Lie Down	Resting Behaviour							
Stop and Roll	Play Behaviour							
Stop and Sniff	Foraging Behaviour							
Urine Marking	Communicative Behaviour							
Zoomies (FRAP)	Play Behaviour							

Analysis Number

Behaviour Analysis on walks

Sensory Observation

Mark up a map of the path taken during a walk.

insert map of route here

SUBJECT INFO

Name: _____

Breed: _____

Age: _____

Gender: ☐ male ☐ female

Rescue: ☐ yes ☐ no

ANALYSIS INFO:

Context: _____

Date: _____

Weather: _____

Time Start-End: _____

Time Duration[1]: _____

Keep note of anything out of the ordinary. What catches your dog's attention? Why is your dog stopping? Whenever your dog breaks from their default action of "walking", take note of what time that is and what they're doing. Then allocate a number (#) to that action to cross reference it on your map so you know where it occured on your path.

#	TIME *(take note in chronological order)*	ACTION	EXTERNAL INFLUENCE NOTES	SENSES *(check all that apply)*				
				Smell	Sight	Sound	Touch	Taste

Analysis Number

Analysis at Home

Behaviour Observation

Create a flow chart below based off your observations in the chart to map out behavioural patterns. Feel free to add percentages to indicate the frequency of the behaviours.

SUBJECT INFO

Name: _____

Breed: _____

Age: _____

Gender: ☐ male ☐ female

Rescue: ☐ yes ☐ no

ANALYSIS INFO:

Type of Home: _____

Date: _____

Weather: _____

Watch your dog through out the day and see what they do. Where are they doing it? When are they doing it? Eventually, patterns will arise and you will begin to understand your pup better.

TIME	ACTION	FUNCTIONAL CATEGORY	ROOM	LOCATION

Analysis Number

Page Number | of

SUBJECT INFO

Name/Age: _____

Breed: _____

Gender: ☐ male ☐ female

Rescue: ☐ yes ☐ no

ANALYSIS INFO:

Type of Home: _____

Analysis of Spatial "Effect Images"

Object Tone Analysis

Perception Image vs Effect Image

Perception Image *is the image the object portrays to the subject in response to the natural subjects tone. For example, a chair naturally emits a "sitting tone" as it's perception image.*

Effect Image *is the image that modifes the perception image of an object due to the subject's prior use and experience of that object. Therefore, if the subject previously used a chair to "climb" up on to reach the top of the shelf, then that chair now has a "climing tone" in addition to it's "sitting tone" - the "climbing tone" is now the effect image.*

Take photos of your living spaces and look at it through the eyes of your dog. What does your dog see?

insert photo of space here

insert photo of space here

insert photo of space here

insert photo of space here

insert photo of space here

insert photo of space here

Analysis Number

Date

Ethogram Analysis

Domesticated Dog

SUBJECT INFO

Name/Age: _____

Breed: _____

Gender: ☐ male ☐ female

Rescue: ☐ yes ☐ no

image of subject

Fill in your observations to date and understand your companion better. If your fur friend does anything not listed on the chartsm feel free to add them in the blank sections.

RESTING BEHAVIOUR		
	Rest	Lying down on side
	Rest	Lying down on back
	Rest	Lying down on belly
	Sit	On hind legs
	Stand	On all 4 legs

LOCOMOTIVE BEHAVIOUR		
	Walk	Default speed
	Trot	Slightly faster speed (almost like a prance)
	Run	Faster and energetic speeds
	Standing Up	Up on rear leg against taller object
	Circle	Repetitive circling at default speed
	Tail Chase	Repetitive circling at faster speeds
	Pace	Repetitive walking, usually along fence/wall
	Social Pace	Repetitive pace with other friend
	Jump	Repetitive motion; hind legs leave ground
	Wall Bounce	Repetitive rebounding off wall
	Flank Suck	Repetitive/prolonged grooming of flank

VOCAL BEHAVIOURS		
	Bark	standard vocalization
	Bark	when irriated by an object/event
	Howl	long drawn out vocalization
	Growl	low pitch vocalization
	Bark at Passers	recorded where objects could be noted

SOCIAL BEHAVIOUR - DOG		
	Contact Dog	Lying in contact with dogs
	Amicable Dog	Lick/Paw dog with tail wagging
	Threat Dog	Snarl against others
	Attack Dog	Bite/Snap/Chase with aggressive intent
	Defensive Dog	Evade, cower, roll over, lick face
	Competitive Dog	Defend object/food; territorial
	Sniff Dog	Nose to any area of dog
	Solicit Play Dog	Bow, short charges with bounce in step
	T-Dog	Muzzel placed around neck of another dog
	Mount Dog	Hetero/homosexual reproductive urges
	Mounted	Subject dog to being mounted

SOLITARY BEHAVIOUR		
	Autogroom	Lick, pull at body/pelage
	Dig	Dig at ground with paws
	Urinate Squat	In squatting position
	Urinate Raised Leg	With one leg raised up
	Kick Ground	Scratch ground following urination
	Sniff Ground	Nose on floor continuously
	Eat	Eating meals/treats
	Drink	Hydrating with water
	Coprophagy	Eating fecal matter
	Chew	Chew non-nutritive material
	Eat Grass	Consume grass blades
	Mouth Toy	Chew toys continuously

Date

Canaine Anatomy Observation

Physiological Analysis

SUBJECT INFO

Name/Age: _____

Breed: _____

Gender: ☐ male ☐ female

Rescue: ☐ yes ☐ no

Add an image of your dog and analyze their physical features. Cross reference those features with the matrices on the the right to get a quick preliminary understanding of your companion's personality and behaviour.

image of subject

SNOUT *(Primary Sense)*	
LONG	SHORT
Eyes on side	Eyes in front
Better peripherals (panoramic views)	Nearsighted
Better at chasing and running after other dogs and toys when thrown	Prone to be better lap dogs because they enjoy staring at owner's faces

LEGS	
LONG	SHORT
Better long ranged running distances	Heightened sense of smell due to physical closer proximity to ground
Faster running	Typically supplemented with longer "sausage" body, which makes them prone to hip dysplasia
Access to higher ledges/surfaces to jump on.	Avoid jumping off ledges and avoid going up/down stairs cases

TAIL *Left wagging tails exhibit anxiety, while right wagging exhibits excitement*	
LONG	SHORT
Better communication to other dogs	Harder communication to other dogs

EARS *(Secondary Sense)*	
UP	DOWN
Better ventilation inside	Prone to ear infections due to lack of ventilation
More expressive in communication	Heightened sense of smell when head shakes to stir air around them

TONGUE *In addition to tasting food, the tongue is also used to supplement the sense of smell by moving chemicals into the vomeronasal organ (VNO), which is also known as the 2nd nose This structure has sensory neurons that detect chemicals and is used to enhance smell through taste.*	
LONG	SHORT
Prone to excessive drooling (Ptyalism)	Less drooling

FUR	
LONG	SHORT
Typically double coat	Typically single coat
Prone to more shedding	Less shedding
Warmer and better suited for winter conditions	Cooler and better suited for summer conditions

City of Toronto
Condominium Consultation
Recommendations Report
Attachment D

Attachment D. Full Survey Results

January 2014

SWERHUN In association with:
R.E. Millward & Associates Ltd.
regionalArchitects
Halsall Associates

Consider strengthening City requirements regarding built form and tall buildings (e.g. setbacks from side lot lines, separation distances between towers).

Response	Chart	Percentage	Count
I do not support this idea at all		4%	11
I somewhat support this idea		4%	12
I am neutral to this idea		8%	23
I support this idea		24%	72
I strongly support this idea		61%	181
	Total Responses		299

Suggested Refinements: Do you have any suggestions to improve this idea?

The 69 response(s) to this question can be found in the appendix.

Provide incentives to developers to provide dog-specific amenities such as poop areas, dog runs, dog washes, etc.

Response	Chart	Percentage	Count
I do not support this idea at all		13%	39
I somewhat support this idea		7%	22
I am neutral to this idea		26%	76
I support this idea		27%	81
I strongly support this idea		27%	79
	Total Responses		297

Suggested Refinements: Do you have any suggestions to improve this idea?

The 58 response(s) to this question can be found in the appendix.

Develop criteria that could trigger a City requirement for dog amenities in a new development (e.g. number of units in the new development, lack of existing dog amenities in the neighbourhood).

Response	Chart	Percentage	Count
I do not support this idea at all		19%	56
I somewhat support this idea		6%	19
I am neutral to this idea		24%	71
I support this idea		28%	84
I strongly support this idea		23%	67
	Total Responses		297

Suggested Refinements: Do you have any suggestions to improve this idea?

The 29 response(s) to this question can be found in the appendix.

The City takes a lead role in collecting and sharing best practices currently in use regarding ‘pet courtesy’ protocols used by local community groups.

Response	Chart	Percentage	Count
I do not support this idea at all		10%	30
I somewhat support this idea		6%	18
I am neutral to this idea		29%	86
I support this idea		35%	102
I strongly support this idea		19%	57
	Total Responses		293

Suggested Refinements: Do you have any suggestions to improve this idea?

The 29 response(s) to this question can be found in the appendix.

Consider “dog free” buildings if adequate open space or amenities cannot be provided to accommodate pet-friendly amenities (Note: This is the jurisdiction of the condominium corporation, not the City of Toronto).

Response	Chart	Percentage	Count
I do not support this idea at all		31%	92
I somewhat support this idea		6%	18
I am neutral to this idea		24%	72
I support this idea		17%	50
I strongly support this idea		22%	67
	Total Responses		299

Suggested Refinements: Do you have any suggestions to improve this idea?

The 34 response(s) to this question can be found in the appendix.

Increase transparency on how/where money collected through the City's parks levies is spent.

Response	Chart	Percentage	Count
I do not support this idea at all		1%	3
I somewhat support this idea		2%	7
I am neutral to this idea		7%	22
I support this idea		39%	115
I strongly support this idea		50%	147
	Total Responses		294

Suggested Refinements: Do you have any suggestions to improve this idea?

The 25 response(s) to this question can be found in the appendix.

Look at other ways/places to provide public space benefits besides parks (e.g. sidewalks, benches, other elements of the public realm, social gathering spaces, etc).

Response	Chart	Percentage	Count
I do not support this idea at all		3%	10
I somewhat support this idea		4%	13
I am neutral to this idea		9%	26
I support this idea		35%	103
I strongly support this idea		48%	143
	Total Responses		295

Suggested Refinements: Do you have any suggestions to improve this idea?

The 44 response(s) to this question can be found in the appendix.

The City should collect and incorporate best practices related to green space provision as part of the City's Parks Plan.

Response	Chart	Percentage	Count
I do not support this idea at all		0%	0
I somewhat support this idea		1%	4
I am neutral to this idea		11%	31
I support this idea		38%	111
I strongly support this idea		50%	147
	Total Responses		293

Suggested Refinements: Do you have any suggestions to improve this idea?

The 21 response(s) to this question can be found in the appendix.

While a developer is trying to lease vacant ground-level space for a long-term commercial tenant, investigate sustainable ways to allow short-term lease or use by arts and culture groups.

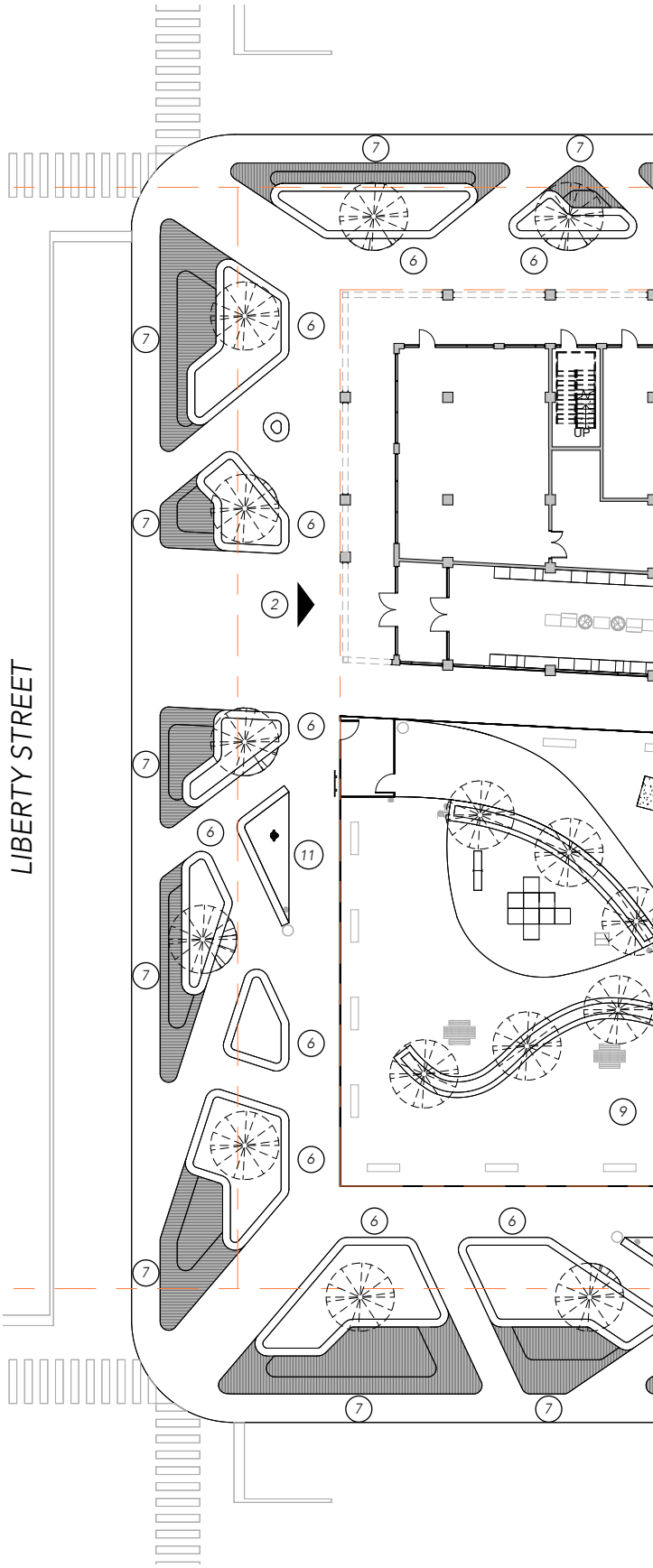
Response	Chart	Percentage	Count
I do not support this idea at all		8%	24
I somewhat support this idea		6%	18
I am neutral to this idea		16%	47
I support this idea		30%	89
I strongly support this idea		39%	116
	Total Responses		294

Suggested Refinements: Do you have any suggestions to improve this idea?

The 46 response(s) to this question can be found in the appendix.

SITE

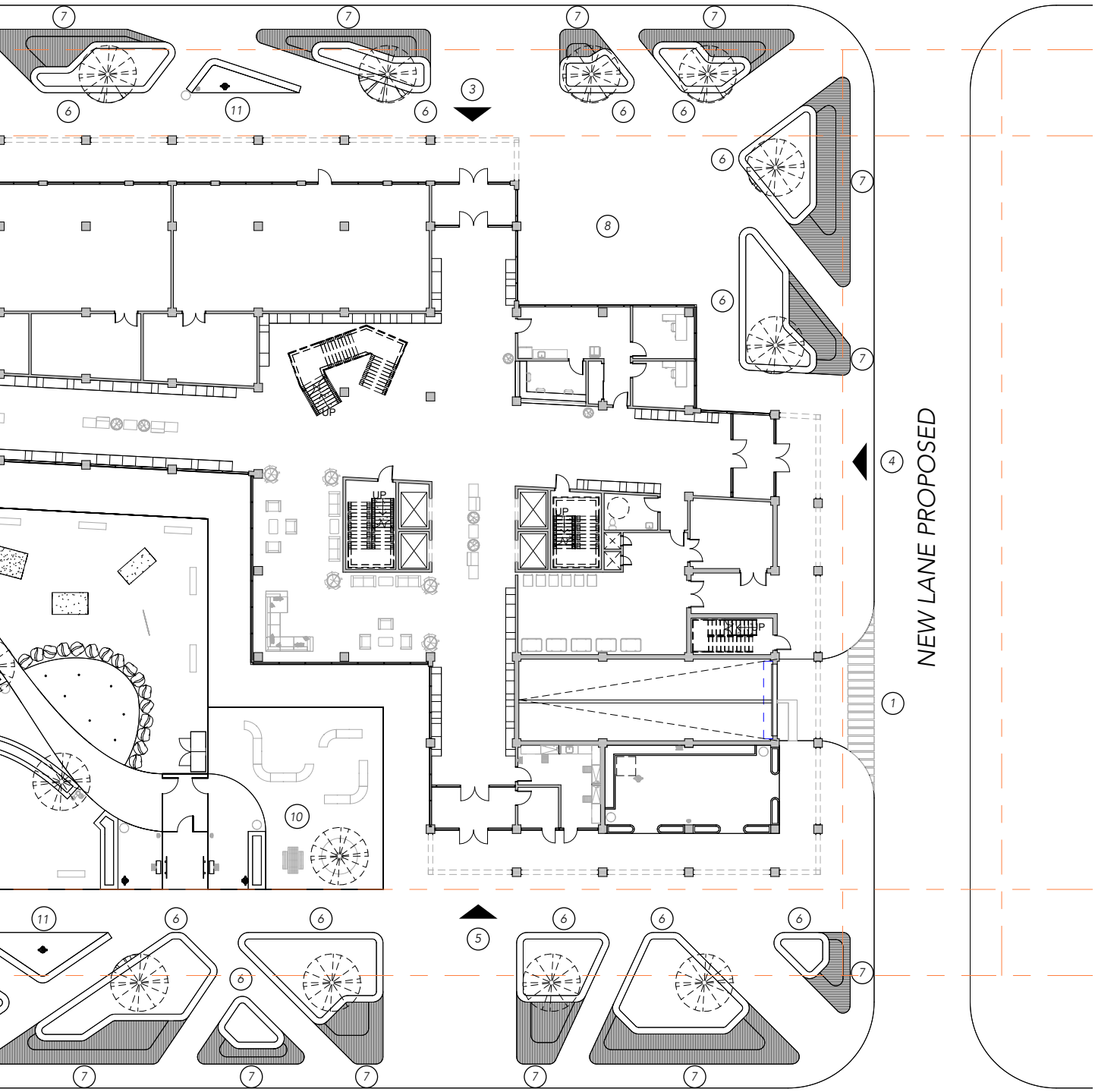
1. Below grade parking garage entrance
2. North Building Entrance
3. East Building Entrance
4. South Building Entrance
5. West Building Entrance
6. Raised planter beds
7. Multi-Level wooden deck feature
8. Open Area for community
9. Primary (large) OLA
10. Secondary (small) OLA
11. Pet relief area in landscaping



SITE PLAN

1:400

HANNA AVENUE



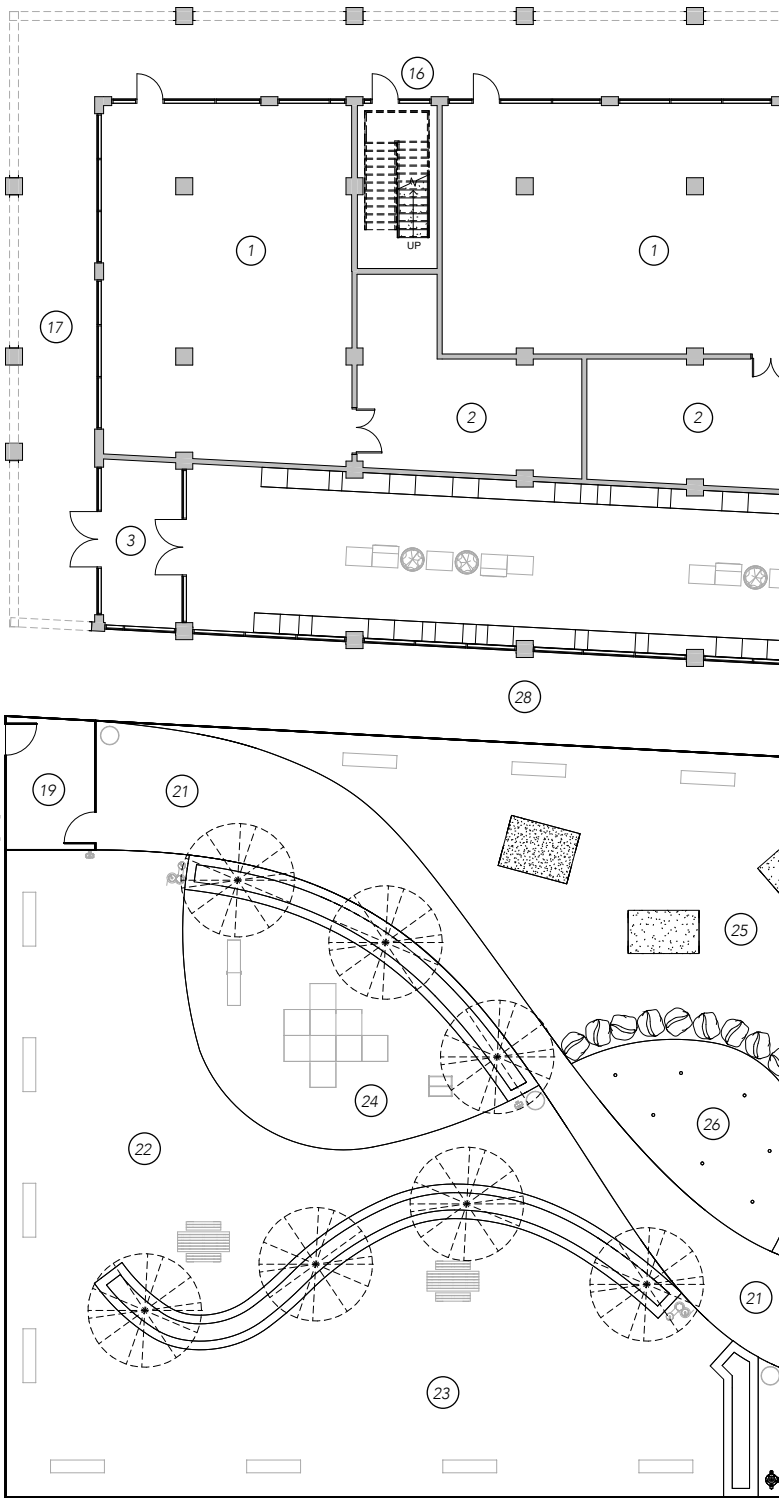
ATLANTIC AVENUE

BUILDING

1. Commercial Retail Support
2. Back of House (BOH)
3. Entrance Vestibule
4. Atrium Lobby
5. Reception Front Desk
6. Administraction Kitchenette
7. Office
8. Lobby
9. Feature Stairs
10. Universal Washroom
11. Mechanical Room
12. Garbage Room
13. Parking Garage (below grade) ramp
14. Pet Spa
15. Pet Relief Area
16. Egress Stairs
17. Exterior arcade

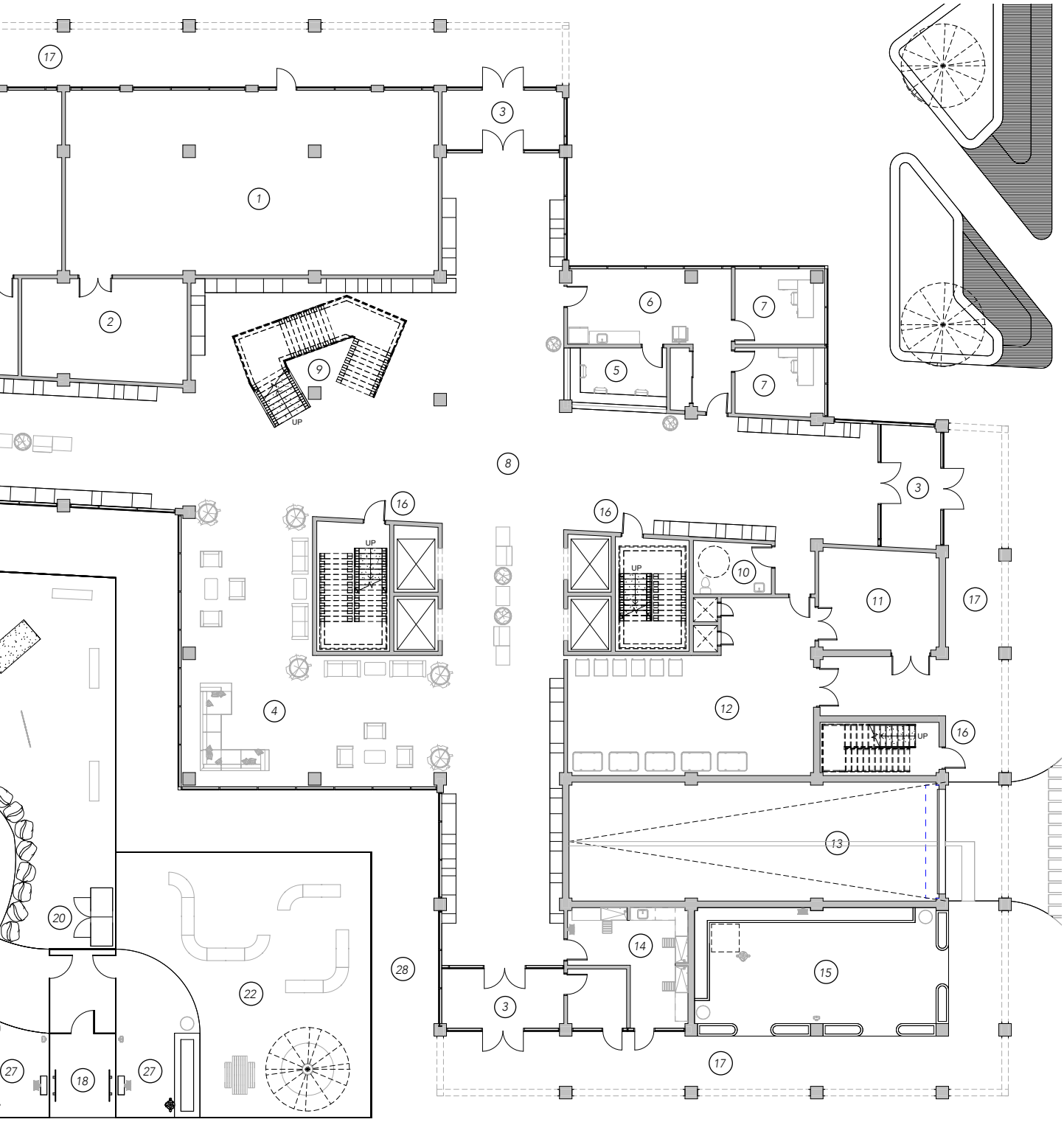
OFF-LEASH AREA (OLA)

18. West Entrance Gate
19.North Entrance Gate
20. Storage Unit for Toys
21. Permeable Paver path
22. Grass Area
23. Long Grass Area for fetch]
24. Sand Pit Area
25. Mulch Area
26. Splash Pad for summer
27. Pet Relief Area
28. Walking path



FLOOR PLAN | LEVEL 1

1:300

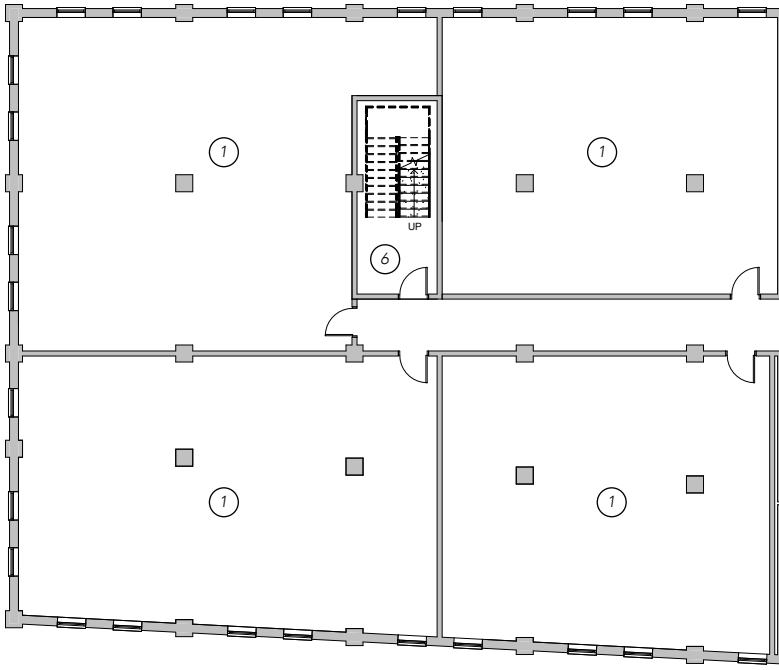

17
1
3
2
9
UP
6
7
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16
UP
4
16
UP
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17

BUILDING

1. Rentable Units
2. Public Washrooms
3. Feature Stairs
4. Corridors
5. Open to Below Atrium
6. Egress Stairs

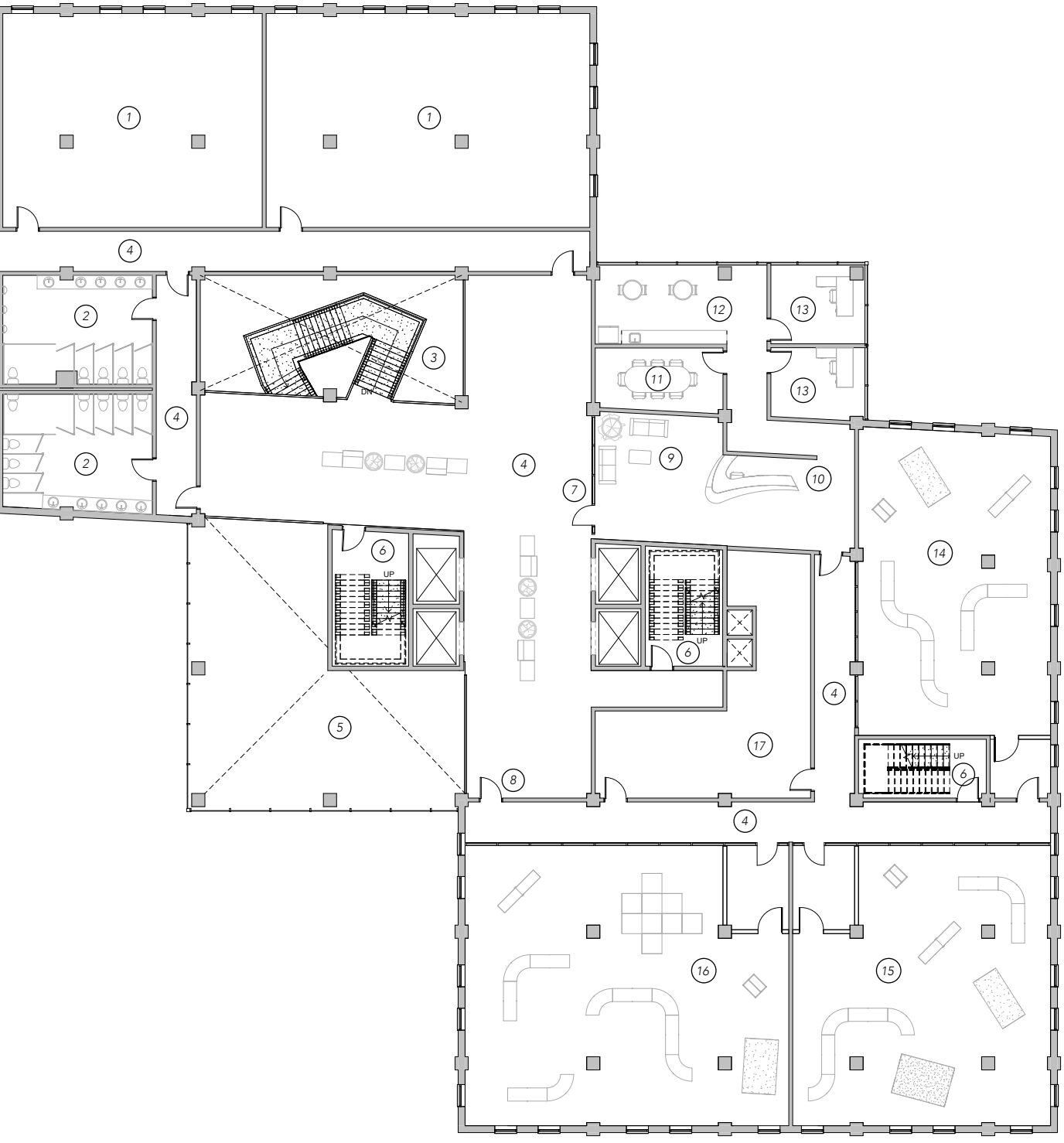
IN-HOUSE DOGGY DAYCARE

7. Primary Entrance
8. Secondary Entrance for employees
9. Waiting Area
10. Front Reception Desk
11. Meeting Area
12. Kitchenette
13. Office
14. OLA Play Room #1 for Small Dogs
15. OLA Play Room #2 for Medium Dogs
16. OLA Play Room #3 for Large Dogs
17. Kennel Room



FLOOR PLAN | LEVEL 2

1:300

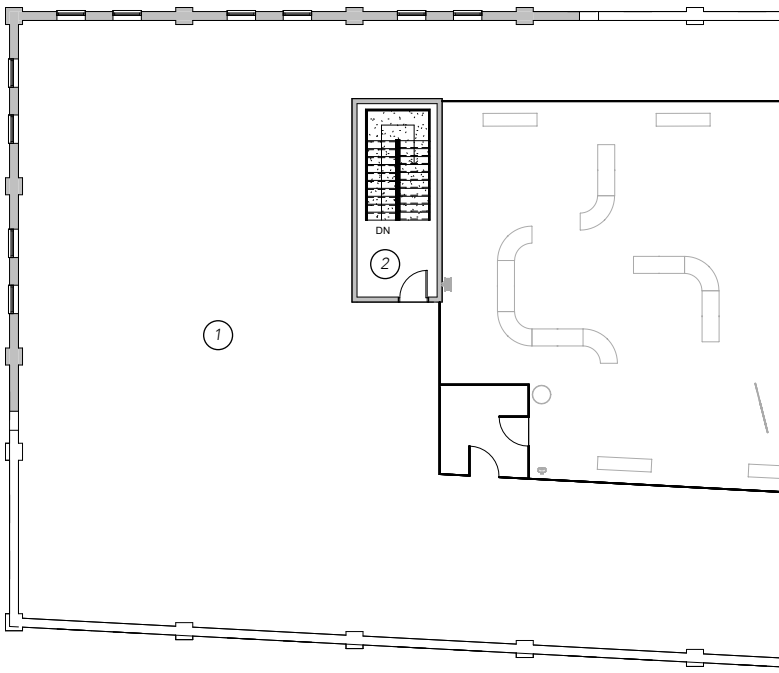

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BUILDING

1. Roof Top Communal Gathering Space
2. Egress Stairs
3. Corridor
4. Open to Below Atrium
5. Vestibule

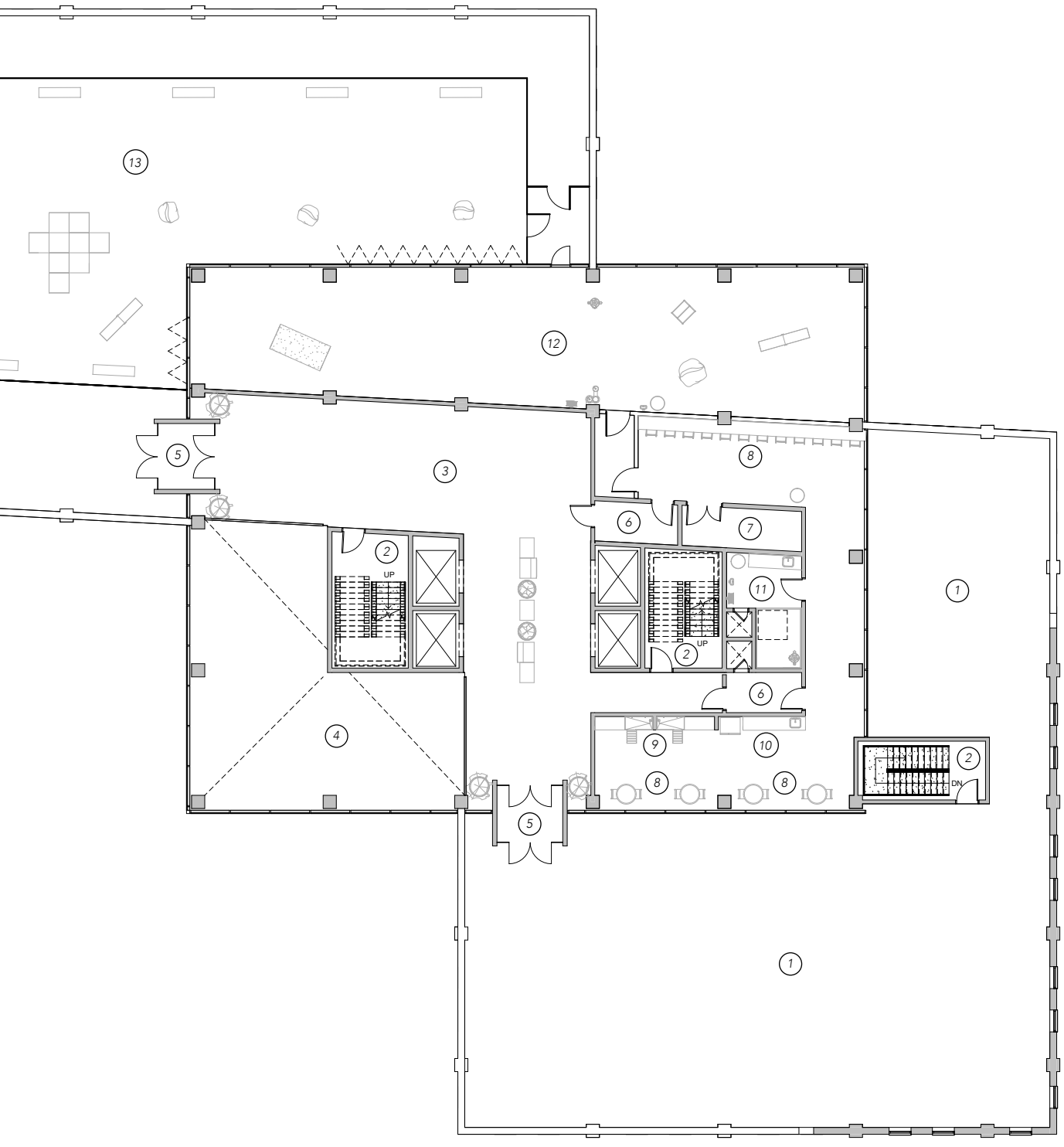
ABOVE GRADE OFF LEASH AREA

6. Vestibule
7. Storage Room
8. Seating Area
9. Dog Washing Station
10. Kitchenette
11. Pet Relief Area
12. Indoor OLA Play Space
13. Outdoor OLA Place Space



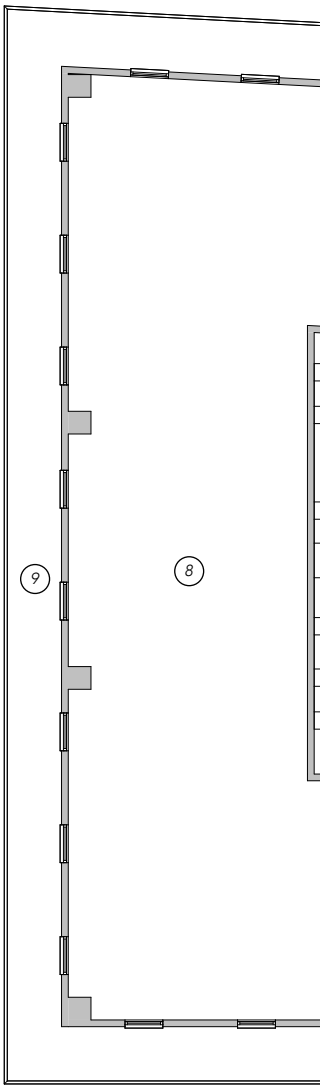
FLOOR PLAN | LEVEL 3 PODIUM ROOF TOP

1:300


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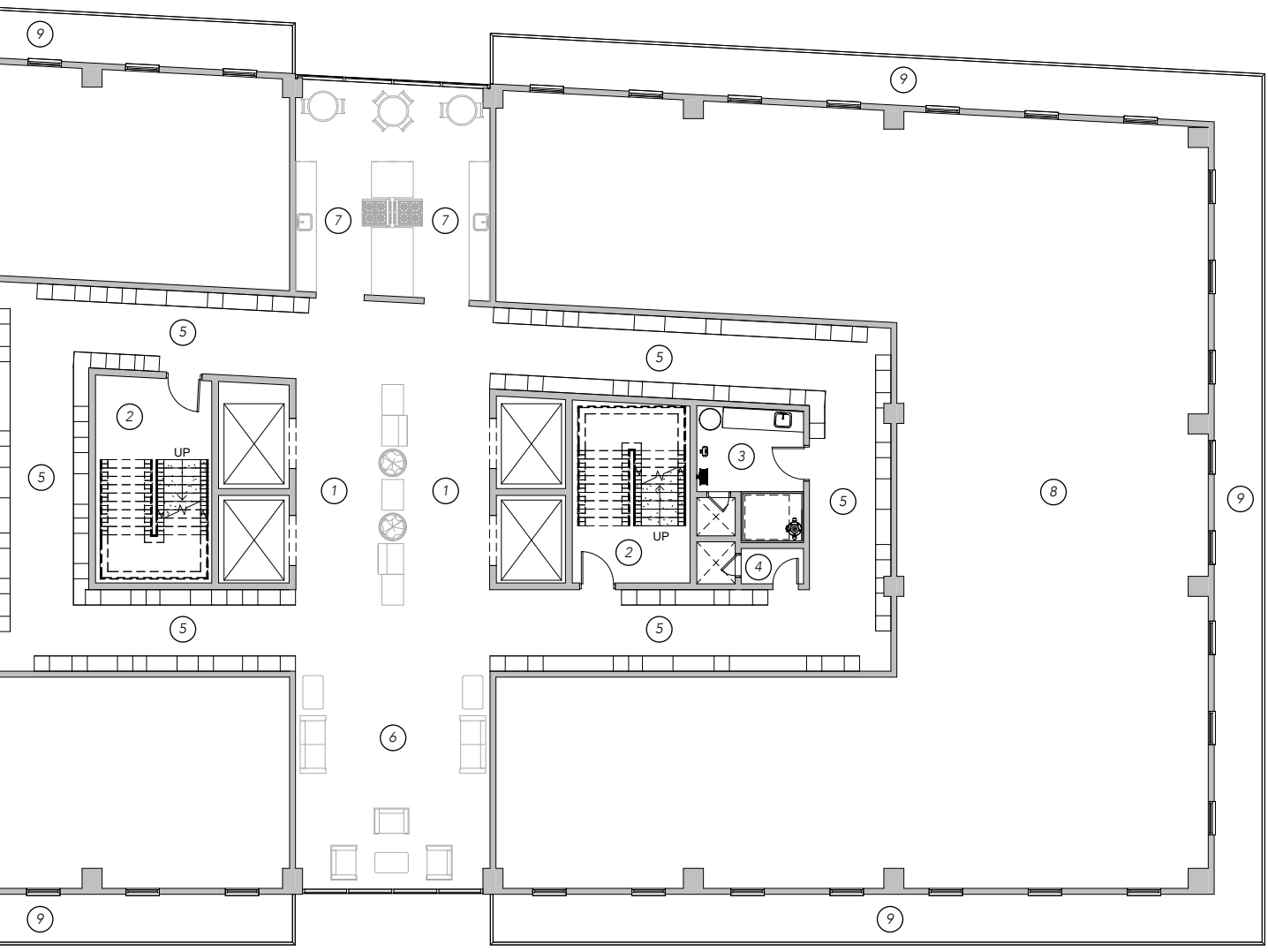
BUILDING

1. Elevator Waiting Area
2. Egress Stairs
3. Pet Relief Area
4. Garbage Chute Disposal
5. Corridor
6. Public Lounge Area
7. Community Kitchen & Dining Area
8. Residential Coop Units
9. Balconies



FLOOR PLAN | TYPICAL RESIDENTIAL COOP LEVEL

1:200


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BUILDING

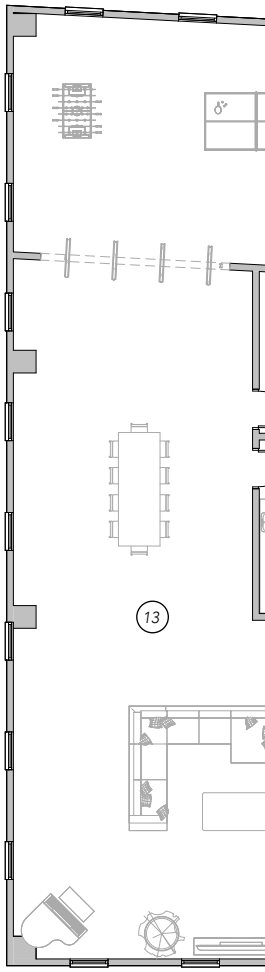
1. Elevator Waiting Area
2. Egress Stairs
3. Garbage Chute Disposal
4. Corridor

ABOVE GRADE OFF LEASH AREA

5. Vestibule
6. Storage Room
7. Seating Area
8. Dog Washing Station
9. Kitchenette
10. Pet Relief Area
11. Indoor OLA Play Space
12. Outdoor OLA Place Space

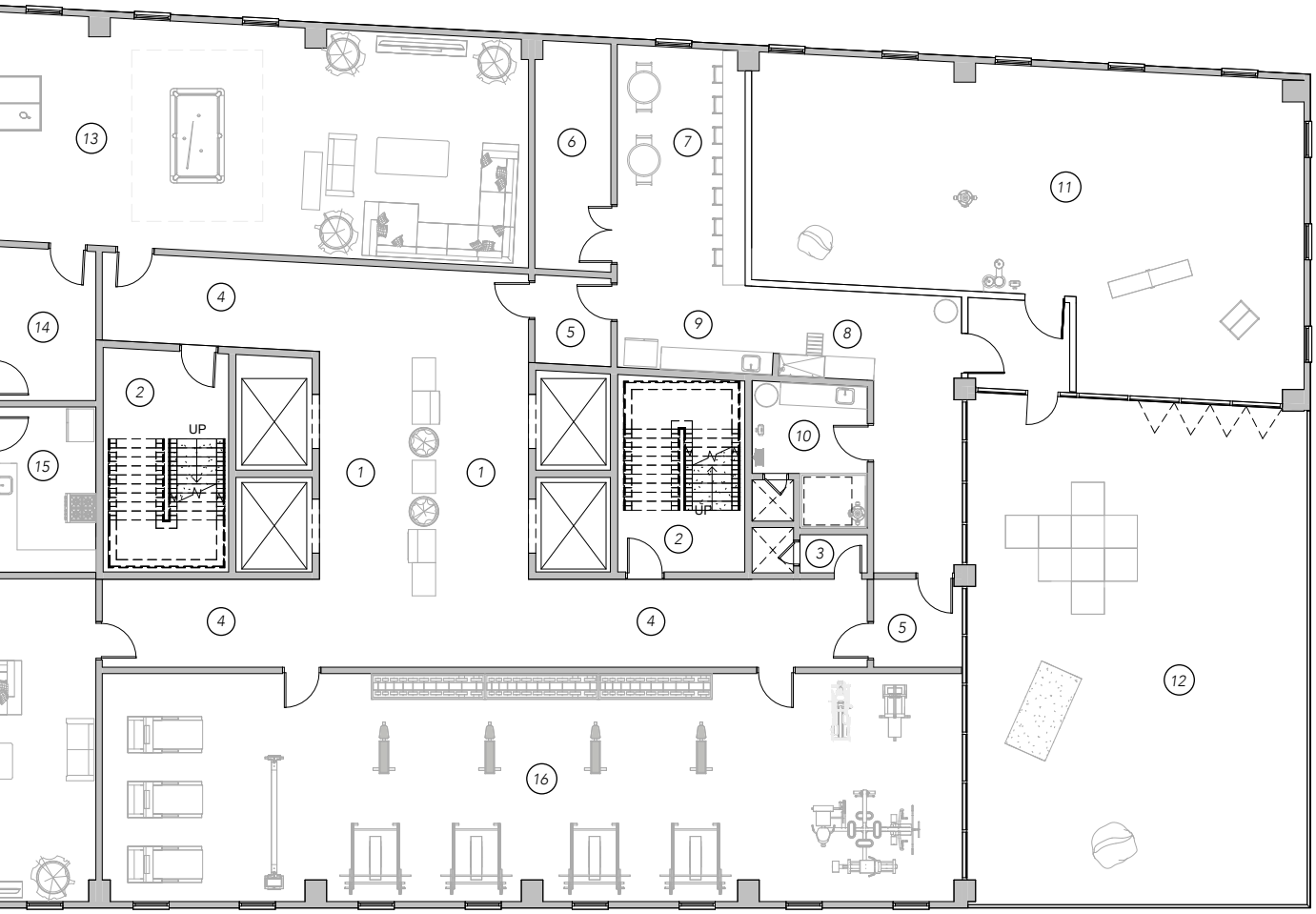
AMENITY FACILITY

13. Party Room
14. Storage
15. Kitchen
16. Fitness Center



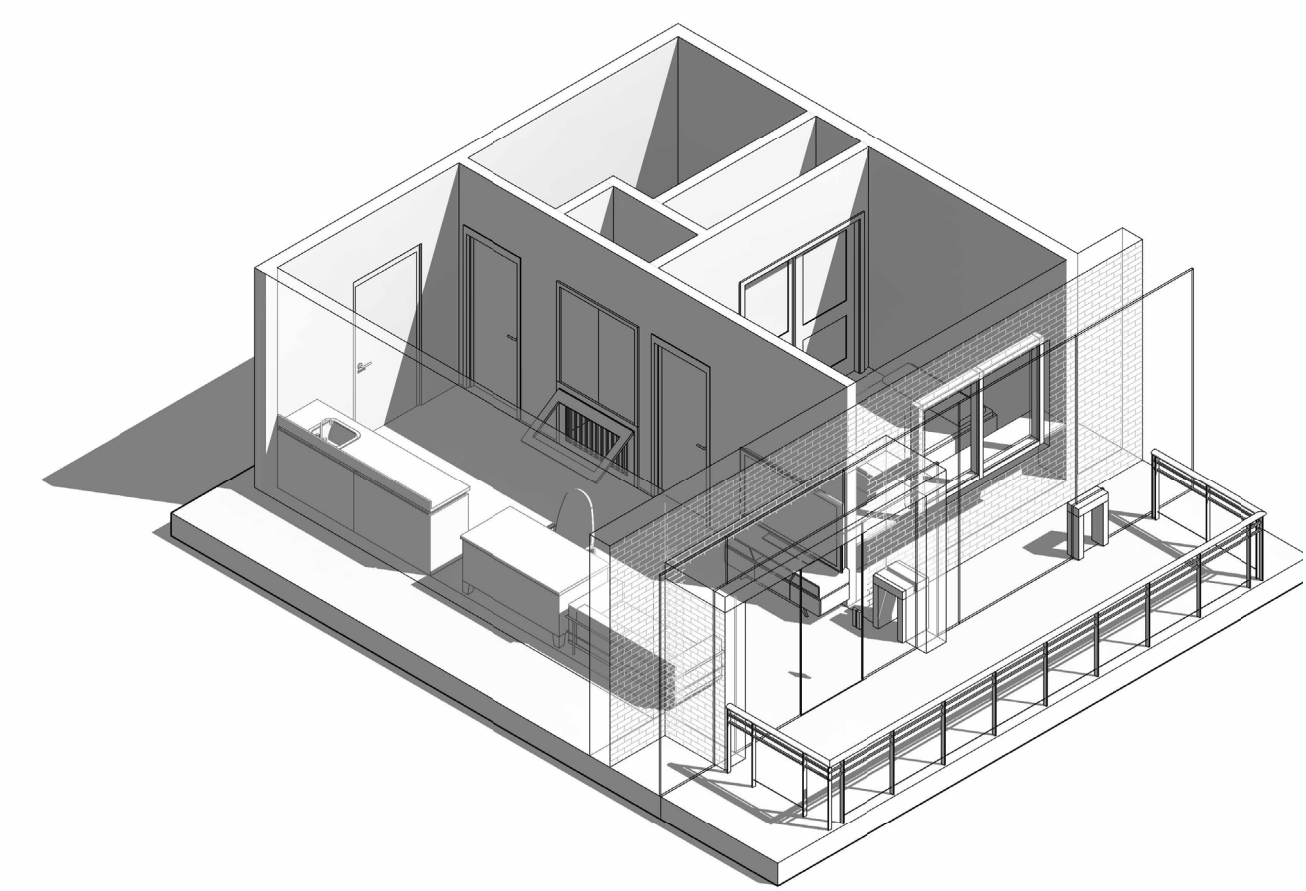
FLOOR PLAN | TYPICAL RECREATIONAL LEVEL

1:200

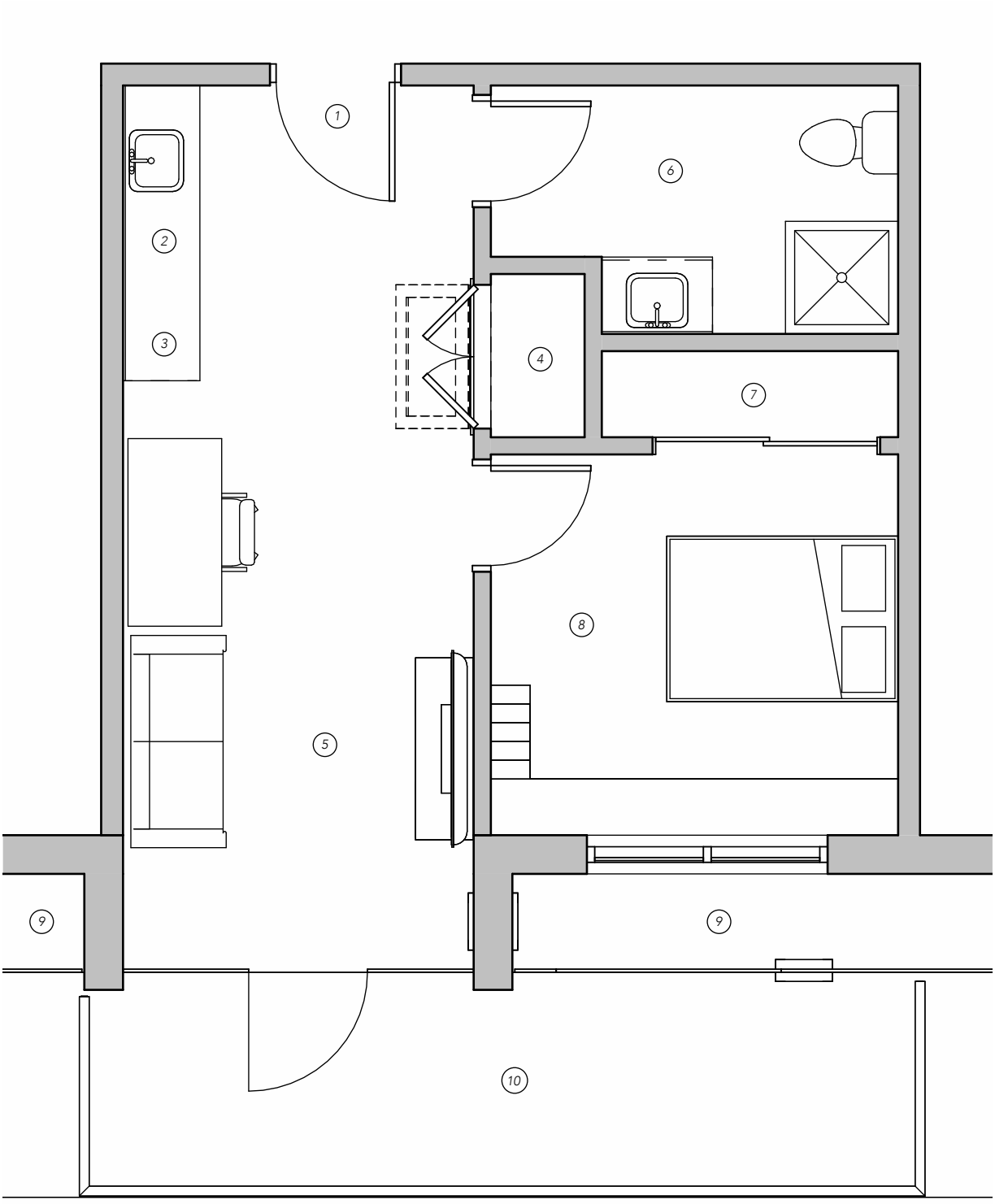

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UNIT

1. Entrance
2. Kitchenette
3. Dog Food & Water Station
4. Integrated Dog Crate
5. Living Room
6. Washroom
7. Closet
8. Bed Room
9. Accessible Double Skin Facade
10. Canine Accessible Balcony



AXO | TYPICAL COOP RESIDENTIAL UNIT



FLOOR PLAN | TYPICAL COOP RESIDENTIAL UNIT

1:50