VOLUME 3: BUILDING DESIGN REIMAGINED HOW WILL COVID-19 AFFECT BUILDING DESIGN?



THE FUTURE OF BUILDING DESIGN WHAT ARE THE QUESTIONS EVERYONE IS ASKING?

TABLE OF CONTENTS

SECTION 1: What are the new challenges landlords face?

SECTION 2: What will tenants ask of you?

SECTION 3: How much real estate will tenants look for?

SECTION 4: How might amenities change in size?

SECTION 5: What new design concepts can separate you from your competition?

SECTION 6: What are the new technologies to manage space?

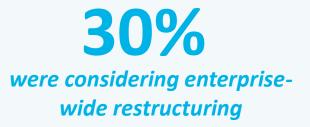
SECTION 7: How can Margulies Perruzzi help?



SECTION 1 IDENTIFYING NEW CHALLENGES

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"businesses need a whole new shift in strategy, structure, and staffing."



Korn Ferry's survey of about 3,500 organizations suggested this kind of reality check hadn't quite come yet: as of late May

WHAT ARE THE NEW CHALLENGES LANDLORDS WILL FACE AS TENANTS RETURN?



Complying with **social distancing** in common areas spaces Increase of security/ safety protocols



Increase of HVAC performance and outside air intake



Providing hands-free options



Reduction in **public transportation** use



Reduction of **on-site employees** by tenants As tenants think about coming back to the office or looking for new space, you should be prepared to answer many new questions such as:

- What **HVAC upgrades** have been done to the building?
- Do you have any building entrance screening procedures in place?
- What technology upgrades have been made to allow us to monitor the HVAC, occupancy and security of our space?
- How is **food service** or food delivery being handled to the building?
- With public transportation not in full use, how much parking is available for my colleagues?
- How are high-touch surfaces being addressed?
- Is there more **fresh air** in the building today?
- What level of LEED/WELL Building standards do you have in place in your building?
- How will you regulate the **fitness center**?
- Do you have any grab-n-go food service amenities?
- Is there **outdoor space** for eating?
- How are **restrooms** being managed? Are there unisex restrooms for our staff to use?
- How are elevator controls being used? Are they programmed to fit our needs? Are there dedicated elevators for our company?
- What are the protocols regarding visitors? Do you have a shared conference space near the main lobby that we could utilize?
- Are security/entrance fobs touch-free?
- Has the door hardware in the lobby been upgraded to be touch-free?

SECTION 2 HOW MUCH REAL ESTATE WILL TENANTS LOOK FOR?

SF PER SEAT CASE STUDY: BASED ON AN OFFICE OF 100 PEOPLE

% STAFF IN THE OFFICE IN RELATION TO REQUIRED REAL ESTATE

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PRE-COVID-19 | 125 SF/Per Seat 12,500 SF 100% POST-COVID-19 | 200 SF/Per Seat After Social Distancing 5,000 SF 25 % 50 % 10,000 SF 75 % 15,000 SF 100 % 20,000 SF

With increased sf/per seat requirements, offices aiming for 100% capacity will require much more sf now than in pre-Covid-19 times.

SECTION 4 HOW MIGHT AMENITIES CHANGE?

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New emphasis on social distancing and mitigating the spread of germs will influence the size and style of many popular building amenities.



Elimination of salad bars and other buffet-style stations to mitigate spread of germs.



Grab-n-go markets with prepackaged foods will replace the traditional servery.



Unisex restrooms will provide more personal and enclosed space to contain the spread of germs.



Reduction in amount of redundant equipment to comply with social distancing. Staggered use times and a shift to smaller, boutique fitness spaces may emerge.



Provide timed- access to fitness centers and locker room areas to avoid overcrowding, or provide larger locker rooms



Bookable conference rooms near the lobby will allow tenants to meet with visitors without having to bring them into their office space.









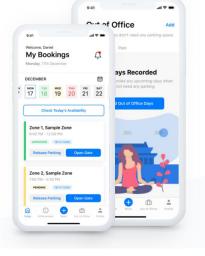


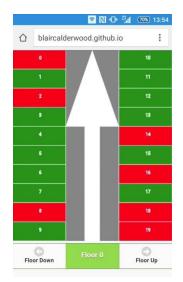
Retrofit Existing Buildings

- Hands-free entry
- Online parking reservation system
- Temporary lots, attendants with stacked parking may be necessary due to more people driving into the office (or will be offset by less people coming into the office)

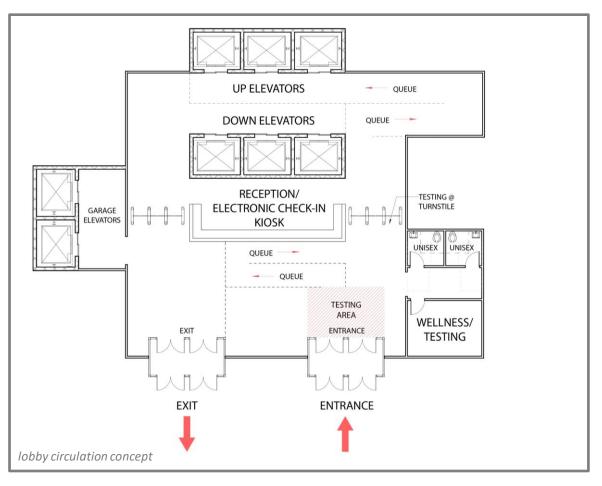
Advancements Available for New Buildings

- Touch-free key fob access and security systems compatible with mobile phones
- Touch-free after-hours security intercom system
- Touch-free elevator access systems
- Private, in-building, exclusive parking providing direct, touch-free, secure access to tenant floors
- Auto-revolving front doors
- Online parking reservation system









Retrofit Existing Buildings

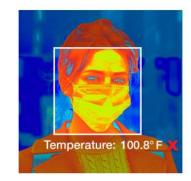
- Social distancing in lobbies
- Queuing area for check-in/security desk
- Hands-free entry
- Touch-free thermal scanning at lobby/security desk
- Identify one-way path of travel

Advancements for New Buildings

- Advanced screening technology/entrance control systems
- Unisex restrooms at lobby for guests
- Provide a screening/testing room at lobby
- Shared conference spaces at lobby-level
- UVC light sanitation
- No-touch activated control buttons

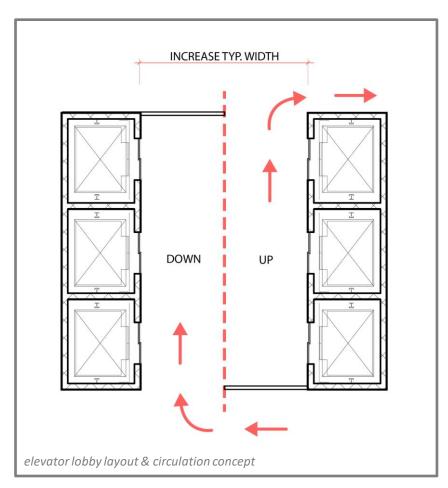








Elevator Lobbies



Retrofit Existing Buildings

- Reprogram elevators depending on need
- Establish distinct circulation path and queuing area

Advancements for New Buildings

- Establish distinct circulation path and queuing area
- Occupancy limiting elevator cabs
- Larger cabs to accommodate social distancing
- Designated elevators for each tenant
- Wider elevator lobbies
- Separate up/down elevators



Elevator Technology



New Technologies

- UVC sanitizing light when unoccupied
- Toe-touch elevator call buttons
- Smart elevators
 - Scan QR codes to call elevator and select destination
- Voice or fob-activated control buttons

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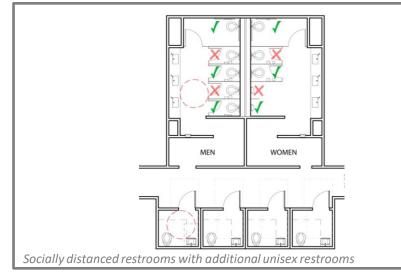
UVC sanitizing light

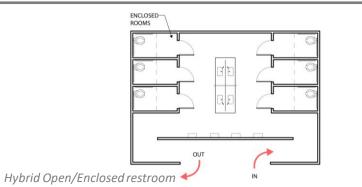


"Toe-to-go" call buttons

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Restroom Layout and Design





Retrofit Existing Buildings

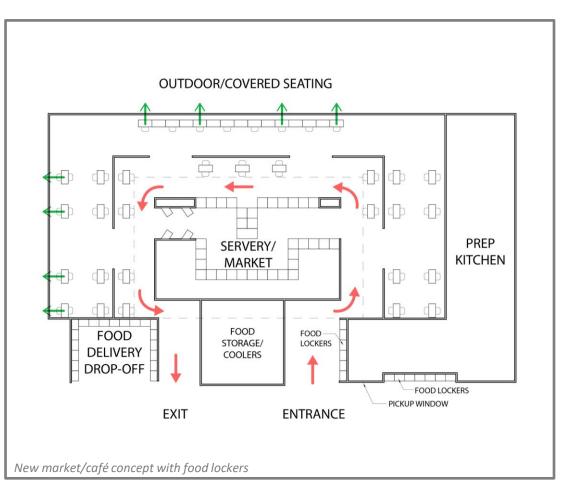
- Touch-free, solar-powered fixtures & accessories
- Install new toilet partitions down to the floor
- Install toilets with auto seat covers
- Install naturally antimicrobial materials such as silver or copper
- Provide UVC lighting for off-hours sanitation
- Refinish walls with a microbicidal paint (kills 99.9% of microscopic organisms within 2 hours of exposure on painted surfaces)

- Gender neutral restrooms for more division of space
- S-shaped entry with no door to avoid a touch-point
- Improved ventilation
- Establish one-way circulation
- Provide vitreous fixtures with hydrophobic glaze



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Grab-n-Go, Cafes and Food Pickup



Retrofit Existing Buildings

- Disposable, environmentally friendly materials
- Separate tables for increased social distancing
- Create a one-way circulation pattern

- Cleanable surfaces
- One-way circulation path structure
- Tables distanced further apart
- More air exchanges
- Encourage outdoor eating

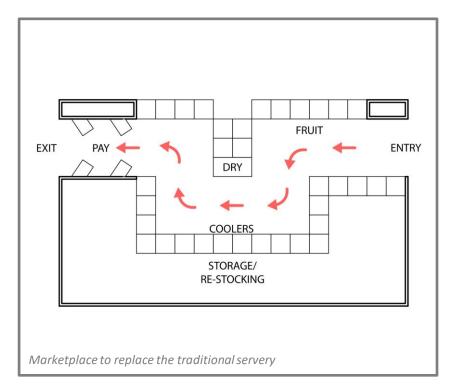






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Markets



Retrofit Existing Buildings

- Staggering times for people to visit to avoid mealtime rush
- Social distancing in the servery
- Online Ordering to avoid lines
- Eliminate self-service salad bars

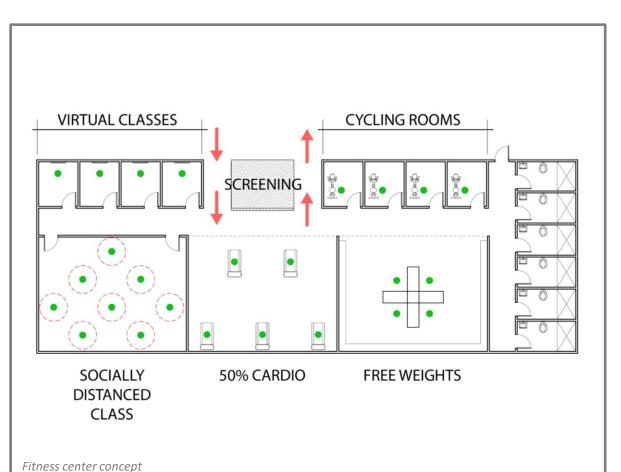
- More grab-n-go refrigeration areas
- Cash-free purchases (kiosks or app based)
- Phone ordering
- Create a sustainability plan with increased use of disposable materials
- Healthier Grab-n-go vending





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Fitness centers



Retrofit Existing Buildings

- Establish one-way traffic flow patterns
- Support for virtual training classes
- Touch-free check-in stations
- Reduce redundant equipment to create more space
- Bookable time slots to prevent overcrowding
- Increase disinfectant wipe-down stations

- Increase amount of personal showers
- Electrostatic sprayers for large areas and/or equipment
- Provide one-way, dedicated entrances and exits into facility and locker rooms
- Space lockers for increased distancing



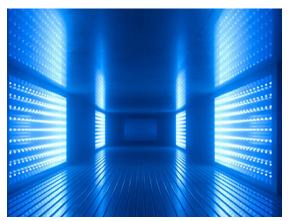








HVAC Systems and the Energy Code



UVC lighting to disinfect ductwork



Retrofit Existing Buildings

- Provide high performance air filters
- Provide UVC lighting sterilizing technology
- Touch-free switches
- Increase fresh air intake

Advancements for New Buildings

• Consider chilled beam systems in lieu of traditional VAV systems

- Design ductwork to allow for UVC sterilizing technology
- Increase fresh airflow
- Design base building to WELL and LEED standards

SECTION 6 NEW TECHNOLOGIES TO MANAGE BUILDINGS

Previously considered nice-to-have, providing technologies that support touch-free and enhanced sanitation solutions should be prioritized as this will be a draw to future tenants. Here are a few options worth exploring:



SAFE SPACE

Scalable, advanced air purifying technology providing continuous treatment in occupied spaces.

disinfection solutions, mobile

Intelligent UVC light

disinfection robots.



bevi

openpath E Envoy

Hands-free door access, contactless elevator integrations, occupancy management, temperature screening integrations.

Touchless, app-based vending and beverage dispensers.

Schindler DARS & FIXTURES

Touch-free elevator call buttons, activation, and antimicrobial elevator materials.

TOUCHSOURCE

Scan-to-mobile building directories, information, and visitor sign-in.



End-to-end platform with over 30 built-in microservices that redefine space management.

Apps to facilitate usercontrolled environments.

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SECTION 7 HOW CAN MARGULIES PERRUZZI HELP?



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your own business continuity or preparations plans from a health and public policy perspective. While we are making efforts to provide you with strategies based on our research from publicly available resources, all details on COVID-19, as well as health and public policy implications, should be addressed with the advice of an independent specialist.