

The Spatial Implications of Disease Outbreaks on The Future of Third Places

A Scoping Review Pilot

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INTRODUCTION

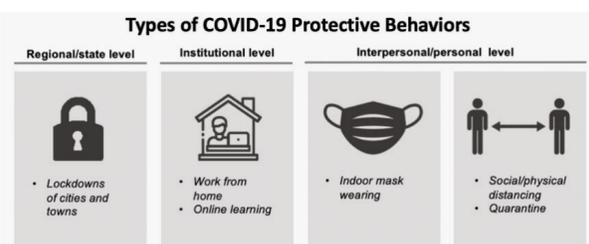
Third places are defined as social places that thrive on social experiences, falling between the two social environments of home and work (Oldenburg, 1999). Throughout history, they have existed through the evidence of ancient archaeological sites, such as the Parthenon and the Circus Maximus. These were places that functioned as vital social platforms to foster and nourish communities. They are places where people can willingly choose to gather, socialize, or merely experience the presence of others without any demands for engagement.

Today, these places have extended from separate forms to become integrated spaces merged into an array of contexts and settings. Studies have revealed various benefits of third places for different groups of users.

	Healthcare	Work Place	Learning
EXAMPLES	<ul style="list-style-type: none"> Atriums Healing gardens Communal Lobbies Dining Spaces Terraces Lounges 	<ul style="list-style-type: none"> Work-cafes Open spaces Collaboration spaces Dining spaces/cafeterias 	<ul style="list-style-type: none"> Learning commons Cafes Library shared spaces
BENEFITS	<ul style="list-style-type: none"> Enhance feelings of community Create positive distractions Increase social support 	<ul style="list-style-type: none"> Increase productivity Enhance creativity Trust relationships Positive sense of community 	<ul style="list-style-type: none"> Increase student engagement Foster indirect learning Enhance feelings of belonging
	(Alvares et al., 2016; Frey, 2018; Pearl, 2019)	(Brown, 2017; Grant et al., 2019; Johnson, 2015)	(Berman, 2020; Bodnar, 2009; Deng, Alford, & Lu, 2019)

However, and as a result of the current COVID-19 pandemic and the its protective behaviors, third places in their different forms and contexts are negatively impacted through changes of experience, capacity and density downgrades, isolation, and even closures. These protective behaviors, while necessary, have impacted the world in terms of economics, politics, culture, education, and health. But also notable are the negative impacts of behaviors that prohibit social interaction on mental health, and, as a result, on overall well-being and public health.

Even though the current pandemic is not the first of its kind, it requires essential changes in design to result in more resilient and adaptable built-environments.



RESEARCH OBJECTIVES

This scoping review is an effort to learn from the strategies that were effective during previous pandemic outbreaks, including the COVID-19 pandemic. The aim is to identify themes of design strategies in existing literature that has investigated design of the built-environment, developed in relation to epidemic outbreaks, which can be applicable to social spaces. Shedding light on these design strategies can help inform future design decisions of more resilient third places in the post pandemic era.

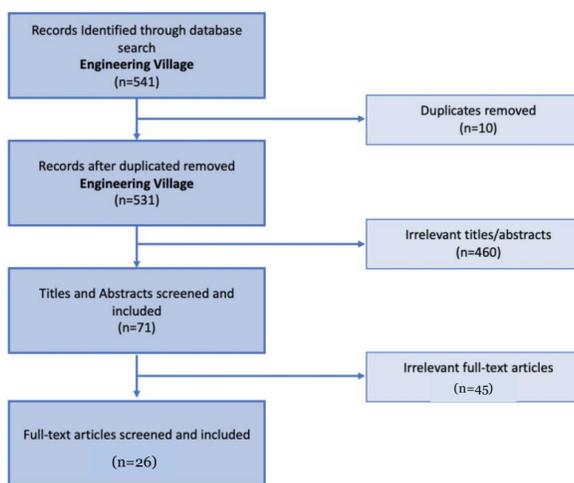
Aim of Pilot: to test the search strategy and further refine it (search themes, search terms and matrix).

METHOD

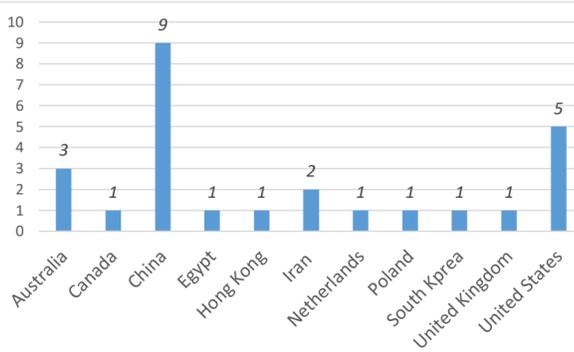
- A scoping review was conducted. Scoping reviews are considered a valid approach to evidence synthesis, as they incorporate a range of studies to systematically summarize and synthesize evidence with the purpose of informing practice, programs, and policy and providing direction to future research trends (Colquhoun et al., 2014). Scoping reviews are similar to systematic literature reviews, in that they follow thorough, structured, and systematic search methods to ensure that outcomes are reliable.
- The review followed [Peters \(2015\)](#) guide that they have expanded from [Arksey and O'Malley's \(2005\)](#) paper on preparing scoping reviews.
- Question:** What is the relationship between past and current epidemic outbreaks and the design of the built environment in public/shared spaces?
- Aims:** To map the types of evidence and the key concepts of design strategies related to the built environment design in relation to epidemic outbreaks.
- Inclusion/Exclusion Criteria:** The search for literature was limited to peer-reviewed, English only publications. No time limitations were set. Publications that focused on the relationship between aspects of the design of the built environment and the epidemic outbreaks of the new era (1899-2021) were included. The review excluded non-English material, grey literature (e.g. reports, working papers, government documents, white papers and evaluations), and studies that did not address aspects of the built environment in relation to disease outbreaks.
- Protocol**
 - Databases:** CINAHL, Web of Sciences, Google Scholar, Engineering Village, and PsychInfo. For the pilot, the search will be conducted on one database only: **Engineering Village**
 - Themes:** The search aimed to select articles that focused on themes of **Epidemiology** and **Built Environment**.
 - Search Terms:** (Pandemic OR Epidemic OR SARS OR COVID OR Spanish flu OR tuberculosis OR H1N1 OR MERS) AND (Built environment OR Architectural design OR architecture OR interiors OR interior Design OR Public spaces).

RESULTS

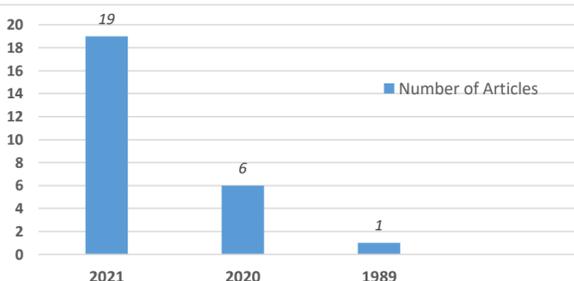
- The search yielded 541 publications using classification codes related to the two pre-determined themes (epidemiology and built environment).
- After removing duplicates and screening titles and abstracts, the full-text screening focused on the selection of papers that specifically referred to the design of interiors with respect to disease outbreaks (n=26).



Results by country

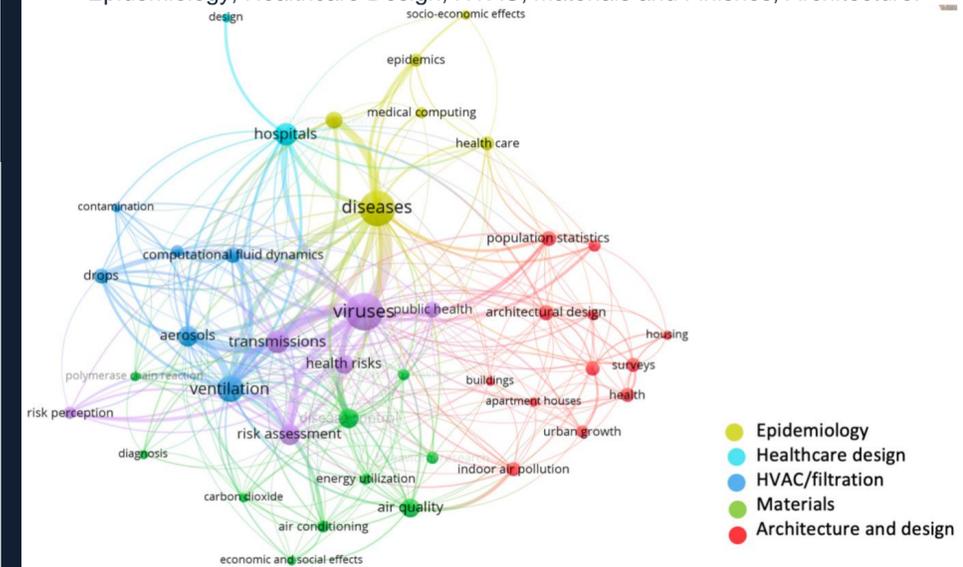


Results by date of publication



PRELIMINARY FINDINGS

- A visualization of bibliometric networks was then conducted using VOSViewer.
- A term co-occurrences map was developed revealing several clusters for the resulted publications as shown below.
- Articles were shown to be focusing on five main topics, which included: Epidemiology, Healthcare Design, HVAC, Materials and Finishes, Architecture.



- Preliminary findings reveal several design strategies referenced from past and current epidemic outbreaks, and classified under the following themes:

Spatial Considerations	Structural Considerations	Materials and Finishes	Furniture	HVAC
<ul style="list-style-type: none"> Consider modular design for flexibility and adaptive reuse Avoid bottlenecks at entrances, exits Accommodate physical distancing – wide hallways and spatial layout Clear way finding through signage 	<ul style="list-style-type: none"> Allow sunlight and fresh air through operable windows Incorporating Indoor-outdoor spaces like terraces, balconies and lightwells Avoid water-bodies indoors 	<ul style="list-style-type: none"> Consider copper or copper alloys finishes for frequently touched surfaces Consider Nanotechnology and nanocoating for frequently touched surfaces Consider Antibacterial glass Avoid carpeting for flooring Avoid porous finishes for walls and floors Use acoustic insulations to decrease noise 	<ul style="list-style-type: none"> Flexible furniture to accommodate distancing and reduce proximity when needed Using physical barriers to decrease spread 	<ul style="list-style-type: none"> Combine mechanical ventilation with natural ventilation for optimum results Control humidity and temperature indoors
n=15	n=18	n=14	n=9	n=12

SEARCH STRATEGY MODIFICATIONS

- After testing the search strategy in this pilot, search terms were modified and generalized, to cover general forms of the built environment in order to result in an adequate number of results.
- The charting form was further developed to allow for a descriptive synthesis of scoping review findings.
- Design implications were elicited from these papers and are relevant to the design of future third places.