

# Assessing Stakeholders' Perspectives on how Evidence Based Design in Healthcare could Improve Healthcare Service Delivery in Canada to Inform New Mixed-use Hospital Building Design



Denise Spacek, International Business Management, Griffith College, Dublin; SRH University, Berlin

## 1. Introduction

- The Covid-19 pandemic reinforced the existing healthcare paradigm is often inadequate.
- The division of acute and subspecialties in hospitals can result in a lack of patient centeredness, poor quality, decreased safety, and unsustainable costs.
- Evidence Based Design (EBD) aims to measure the quality, efficiency, and safety of several built environment design variables to assess their impact on families, physicians, staff, and the organization.

## 4. Methods

- Policy Delphi Case Study
- Delphi Panel - 51 Stakeholders
- Delphi Questionnaire
- Interviews/Emails
- Archival Sources

**Evidence Based Design in Healthcare**

**Evidence Based Design Definition**

Evidence Based Design (EBD) is a framework that suggests the design of the built environment in health care facilities impacts health-related outcomes. The framework aims to measure the quality, efficiency, and safety of several built environment design variables and assesses their impact on patients, families, physicians, staff, and the organization.

**This survey will ask you to rank statements on the following Delphi Criteria:**

**Acceptability/feasibility** - Refers to the extent you agree, would like to see or don't have any adverse perspective on the action or application of built variable were to be implemented. Please consider how desirable the change is in terms of the impact it has on you, patients, families, and colleagues and what the potential repercussions would be.

**Appropriateness** - Refers to how suitable the action or application of the built variable is to solve the problem. In other words, will it solve the problem that we are currently dealing with?

**Impact** - Refers to the contribution(s) or degree of impact the action or application of the built variable will have on the problem.

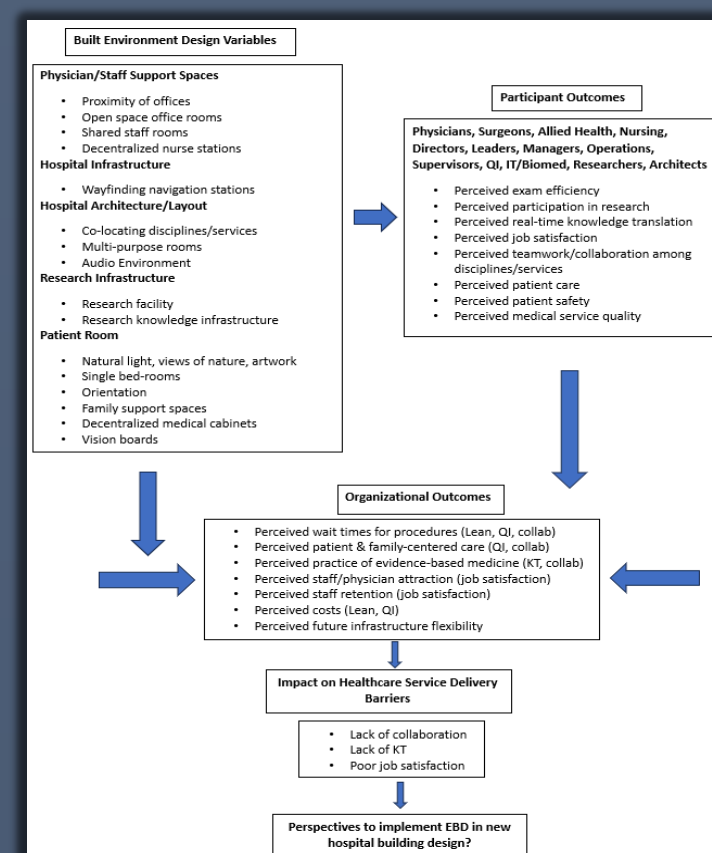
**Feasibility** - Refers to the degree to which the solution is possible in terms of practicality, sustainability (if it makes sense to do over a longer period of time), cost, technology and infrastructure.

☐ Yes ☐ No

☐ Yes ☐ No

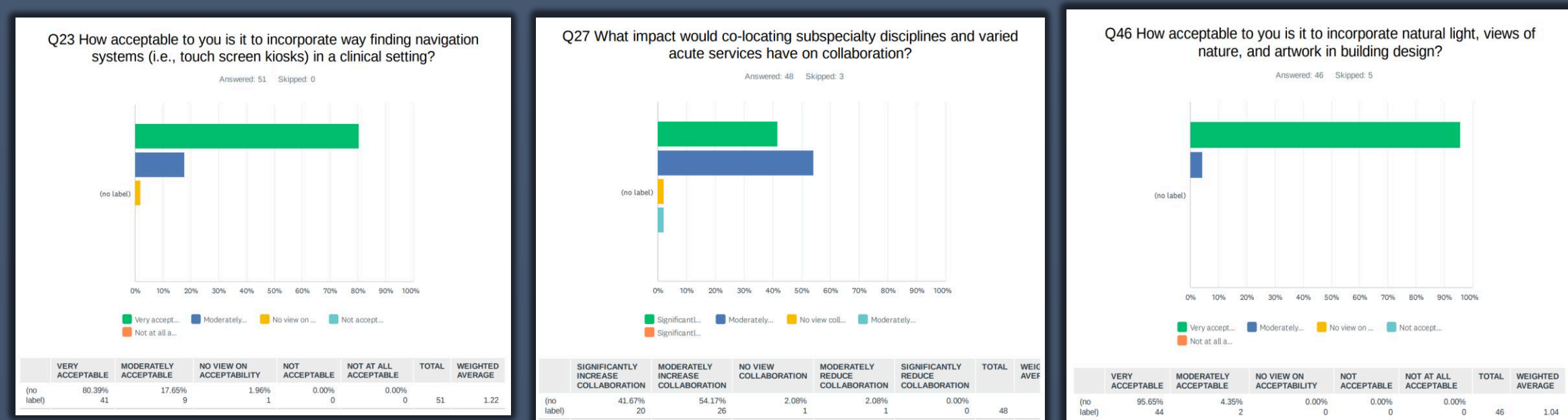
## 2. Research Aim/Conceptual Framework

- Obtain stakeholders' perspectives on a range of Built Environment Design variables, perceived barriers and opportunities for incorporating variables in new hospital building design, and perceptions of EBD potential impacts.

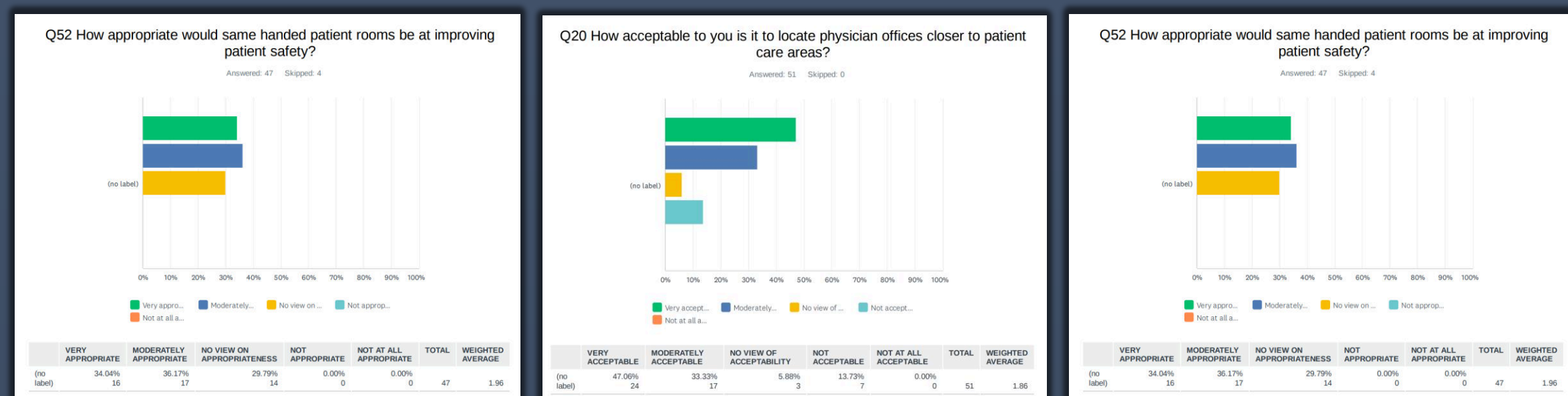


## 5. Results

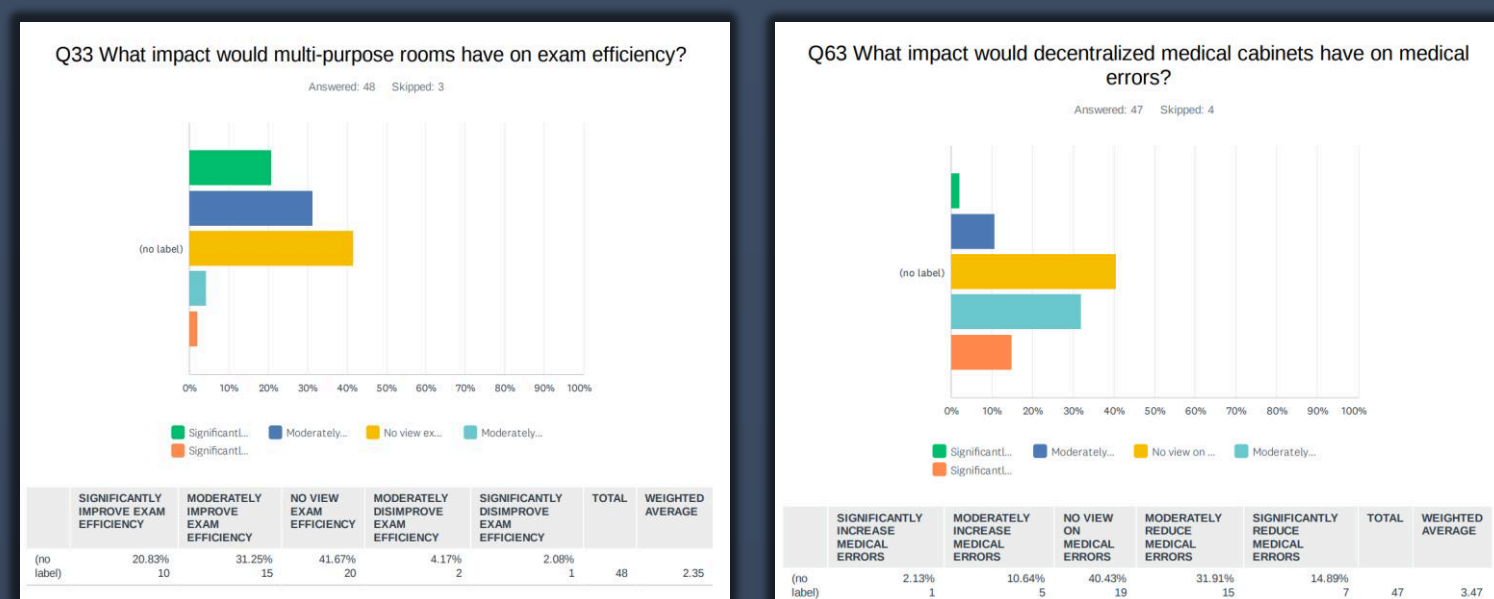
**Greatest Impact:** Open office spaces, Way-finding, Co-locating, Noise reduction measures, Natural light/artwork/views of nature, Single bedrooms, Friends & Family Support Spaces & Vision Boards



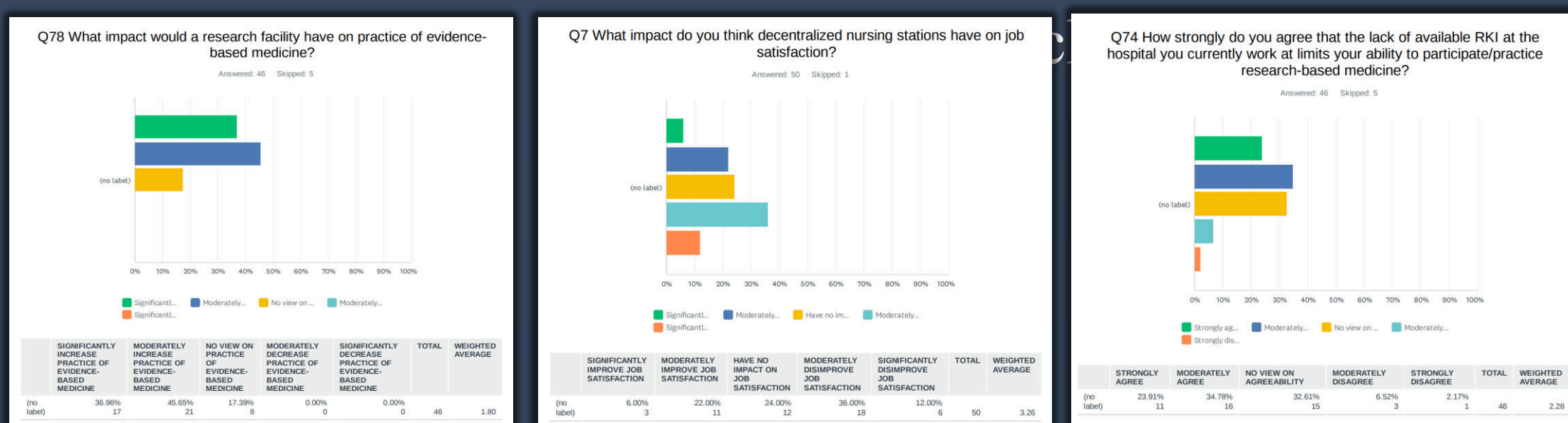
**Less Impact:** Shared staff rooms, Same-handed rooms, Proximal Physician offices



**"No View":** Multi-purpose Rooms, Decentralized Medical Cabinets

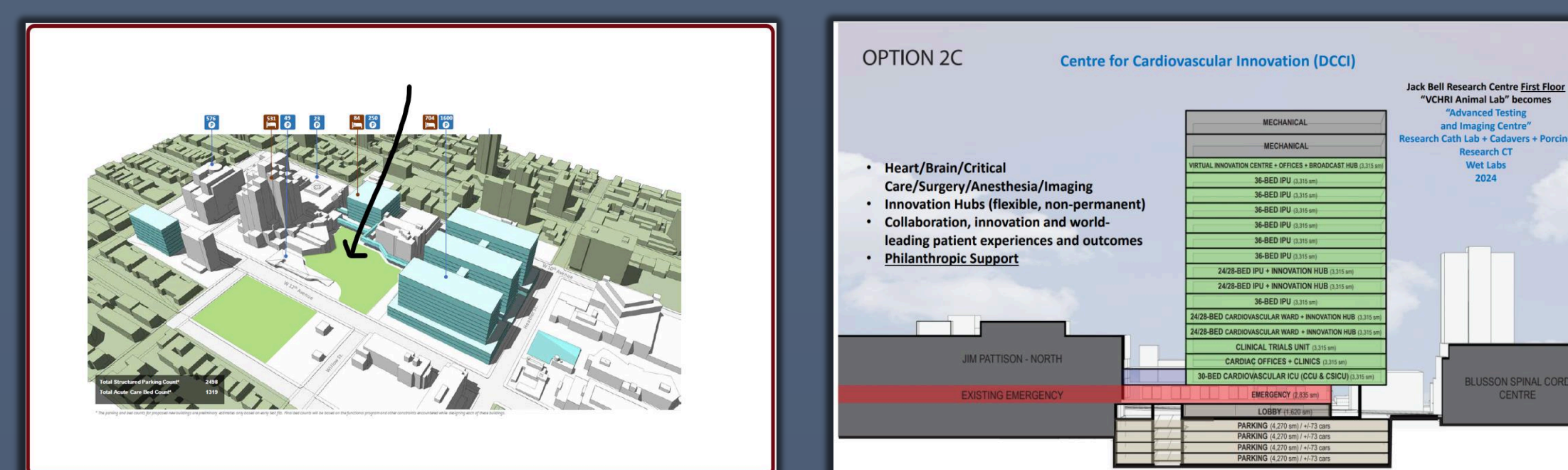


**Most Controversial:** Research Knowledge Infrastructure/Facility & Decentralized Nursing Stations



## 3. Case Context/Significance

- Restructuring of Vancouver Coastal Health (VCH) Campus in Vancouver, British Columbia, Canada.
- New VCH Master Plan will guide development over next 10 years.



- EBD is in its infancy and its effectiveness in improving participant and organizational outcomes is heavily debated in the literature.
- The importance of support for the application of EBD principles among stakeholders is critical for its success.

## 6. Discussion

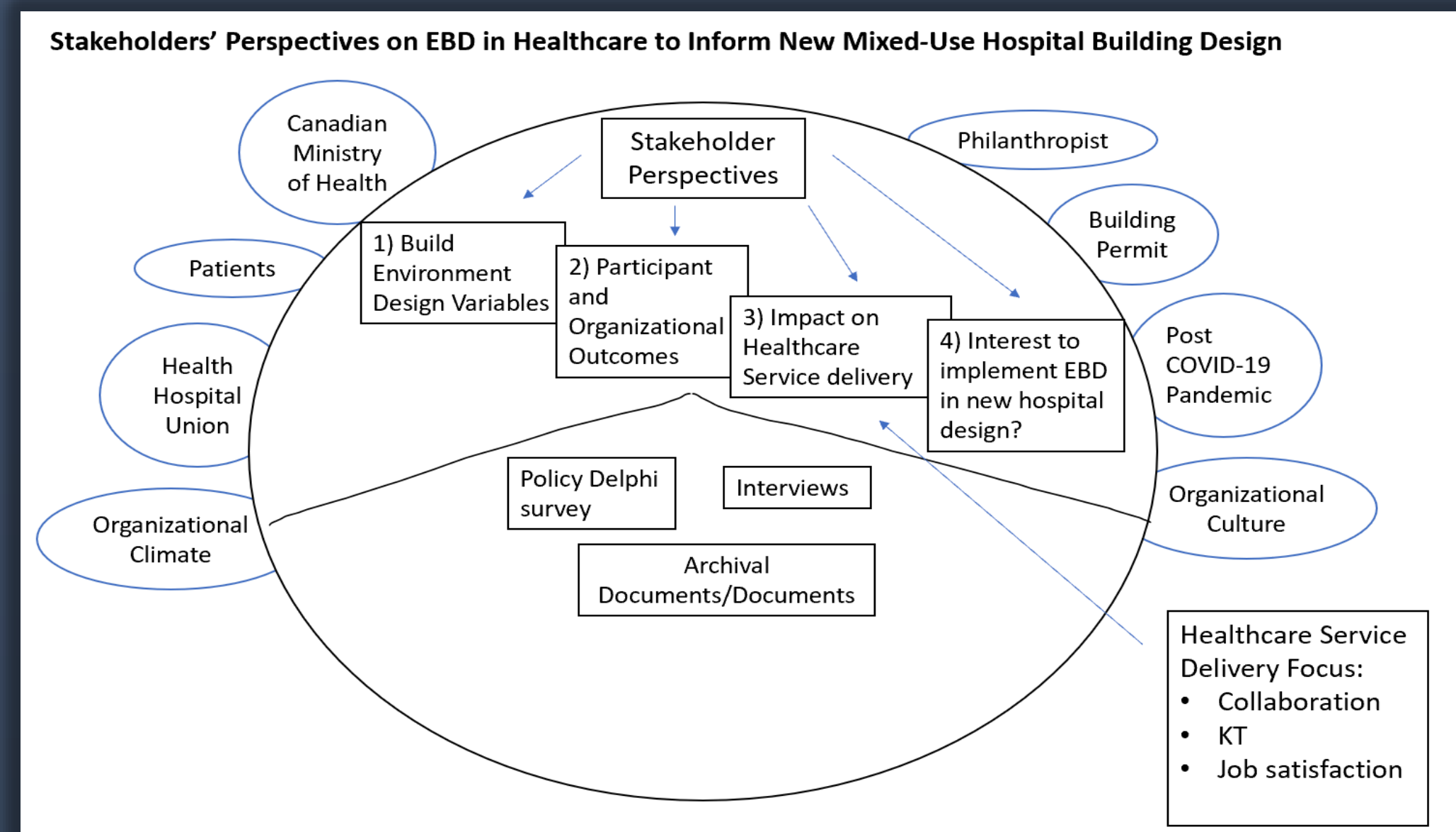
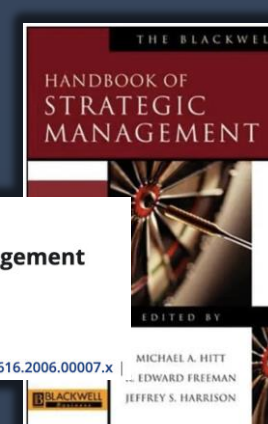
- Most controversial built design variables could have the greatest impact on all three identified healthcare barriers.
- Barriers to implementing built design variables consist of reduced clinical bed and office space, the trade-off between flexibility/efficiency and natural light, patient and staff confidentiality/privacy breaches, the need for increased human resources, costs, public funding and decreasing social interactions among staff.
- Most stakeholders (80.43%) perceive EBD concepts as improving healthcare service delivery and acknowledge that they have a once in a generation opportunity to design a novel and potentially better building design.

## 7. Acknowledgements and Sources

I am sincerely grateful for my supervisor, Justin Keogan for his invaluable guidance and feedback on my research. Additionally, this endeavour would have not been possible without the generous support from the VCH Leadership and the VCH Master Planning Committee.

Contextual

Conceptual and Empirical



Senior Medical Director	Associate Head, VGH Department of Medicine
Quality Leader, MSc, Health, BSc Medical Sciences	Senior Medical Director
Professional Practice Leader - Pharmacy Vancouver Centre	Operations Director, Surgery
Quality Improvement Consultant, Medication Quality Consultant	Biomedical Engineering Manager
MHSU Medical Director - Vancouver Acute	Critical care nurse
Director of Operations - Vancouver Acute	Cardiologist, MD FRCP
Operations Director - Medical Imaging	Interventional Cardiologist
President, Kasian Architecture, Interior Design and Planning	Head, Department of Surgery
Head, Neurology Vancouver Acute	President & CEO VGH & UBC Hospital Foundation
MD, ICU, Intensivist	Senior Vice President Philanthropy
Director of Operations at Vancouver Coastal Health - GFS Rahab	Vice President, Vancouver Acute
Department Head, Anesthesiology and Perioperative Care	Cardiac Surgeon - Head of Cardiac Surgery
Assist Prof, UBC Div of Cardiology / PHD	Patient Clinical Coordinator Cath Lab / RN
Radiology/Imaging Supervisor Cardiac Cathlab	Executive Director Access and Flow and Transitions, VCH
Medical Lead Radiology	Critical Care Nurses/Clinical Support Coordinator
Department Head and Medical Director, Emergency Medicine, Vancouver Acute	Clinical Research Project Manager
Patient Services Manager/RN	Cardiologist
BSc (Structural Engineering), MD, MBA FRCP	Architect ABC
Associate Department Head/Associate Medical Director Emergency Medicine at VA	Operations Director (UBCH) VA, RN, CCRN, BSCN, MHST
Principal at Kasian Architecture Interior Design and Planning	Manager - Patient Care Manager, T12 (thoracic & respiratory services)
Occupational Therapist	Director Acute Psychiatry MBA, DIA, CHE
Biomedical Engineering Department Supervisor	Head, VCH Division of Cardiology, Director, UBC Centre for Cardiovascular Innovation
Operations Director - ED & ICU	Professor, Head of Echo Lab, Associate Head Research UBC, MD, FRCP, FAAC, FASE
Interventional Radiology and Cardiac Cath Lab Supervisor	Chief Clinical Planning Officer, VGH & LGH Major Redevelopments
Registered Nurse	Interventional Cardiologist / SPH and VGH
Patient Services Manager	