

# Mental & Behavioral Health Environments: Critical Considerations for Facility Design

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Supported by the  
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# Introduction

- ❑ Terrible condition of mental health facilities.
- ❑ Little research about facility design in MBH settings
- ❑ Research informed design strategies open doors to dialogue
- ❑ Mental and behavioral health is at the core of salutogenic design



# How to Begin?



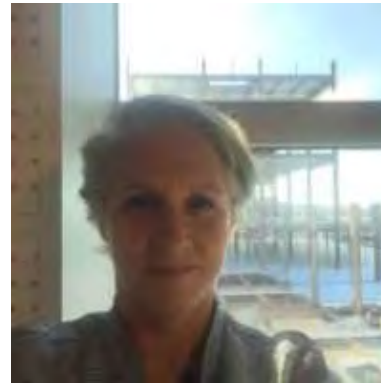
# Introduction

- ▣ Purpose of study:
  1. identify **design features** that critically impact staff and patients in MBH environments
  2. develop a **tool** that will evaluate MBH facilities.
  
- ▣ Support from the Foundation for the Academy of Architecture for Health

# Research Team

Research Co-PIs:

- ▣ Architecture+
- ▣ Shepley Bulfinch



# Research Team

- ▣ Student research assistants
  - ▣ Bachelors student
  - ▣ 3 Masters students



# Methods Phase 1 – Lit Review

- ▣ 300+ article **literature review** published in 2013 supplemented by a follow-up review of 100+ publications. (Also summarized in Shepley & Pasha, *Design for Behavioral & Mental Health* (2017).)
- ▣ Results of review: **17 topics** covering staff/patient needs.



# Methods Phase 1 - Interviews

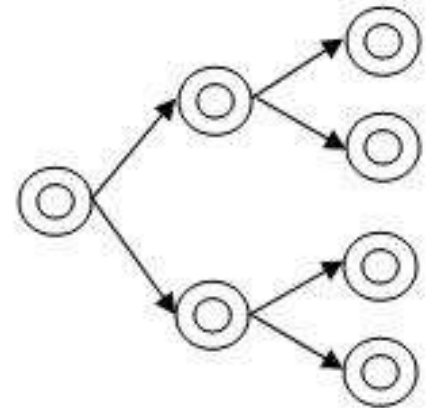
1. Interview and focus group method
2. Objective of interviews:  
**How important were the topics and were they inclusive?**
3. Interviewees identified via snowball sampling





# Methods Phase 1 - Interviews

4. Snowball process initiated with 4 experts.
  - a. Typically 20+ years of experience as clinicians, researchers or practitioners
  - b. published or produced buildings associated with this specialty
5. After 4 iterations, representatives identified



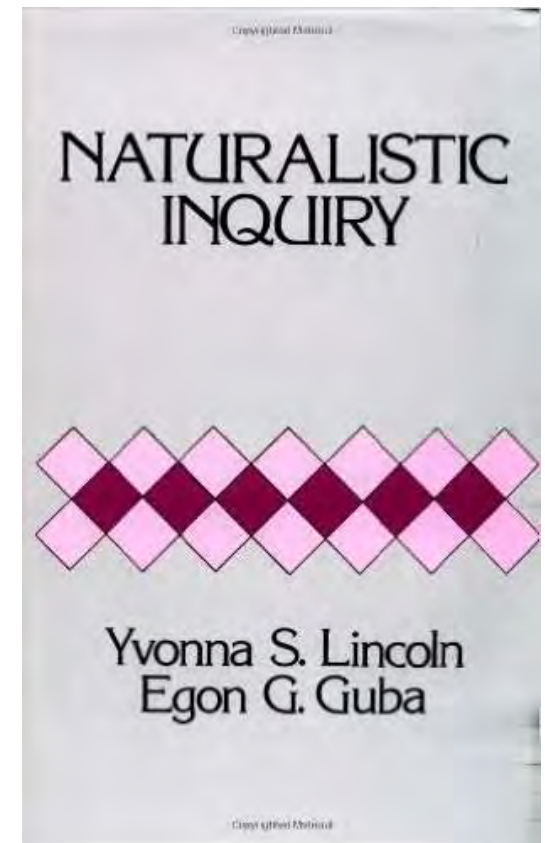
Source: [exploable.com](http://exploable.com)

# Methods Phase 1 - Interviews

- Final group included 22 potential subjects from North America and Australia,
- 19 agreed to participate
- 9 male, 11 female
  - 7 clinicians,
  - 4 academics/researchers,
  - 5 architects/designers,
  - 1 researcher/practitioner and
  - 2 administrators.

# Methods Phase 1 - Interviews

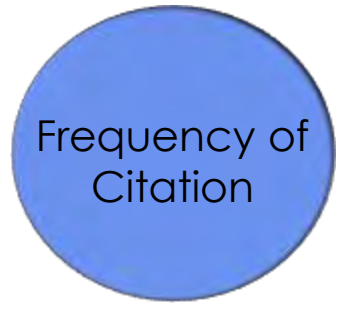
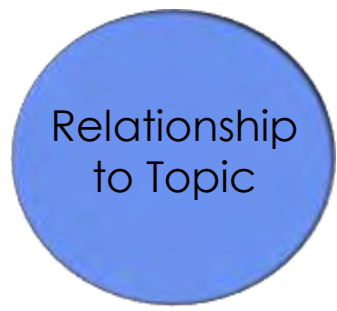
- Interviews lasted 25-40 minutes
- Transcriptions analyzed using grounded theory method described by Lincoln and Guba (1985)



# Methods Phase 1

- 761 notecards generated
- After all cards generated, cards sorted into common topic categories
- Second reviewer analyzed the cards independently to confirm consistency of the categorization.





Inclusion criteria

1. Deinstitutionalized & homelike
2. Orderly and organized
3. Well-maintained
4. Damage-resistant attractive furnishings
5. Visual/physical access to nature
6. Maximum daylight
7. Staff safety/security
8. Staff respite
9. Private/low density rooms
10. Social interaction/community
11. Mix of seating
12. Autonomy & spontaneity
13. Staff patient interaction
14. Nurse station observation
15. Indoor outdoor therapy
16. Smoking rooms
17. Suicide resistant FFE

Identified topics



Appropriate for Study



Exploration of Issues



Shared Definition

Interview content

Topics Generated From Literature Review	% Interviewees Supporting Lit Review Topic for Survey
<b>Deinstitutionalized</b>	100% (16/16)
Orderly/organized	87.5% (14/16)
Well-maintained	87.5% (14/16)
Damage resistant furniture	87.5% (14/16)
Visual/physical nature access	93.8% (15/16)
<b>Maximum daylight</b>	100% (17/17)
Staff safety/security	70.6% (12/17)
Staff support/respice	76.5% (13/17)
<b>Private/low density rooms</b>	100% (17/17)
Social interaction/community	82.3% (14/17)
Mix of seating	94.1% (16/17)
Autonomy & spontaneity	88.2% (15/17)
Patient-staff interaction	94.1% (16/17)
Nurse station observation	94.1% (16/17)
<b>Indoor &amp; outdoor therapy</b>	100% (17/17)
<b>Smoking rooms</b>	64.7% (11/17)
Suicide resistant furnishings	76.5% (13/17)

# Results: 1. Deinstitutionalization

- Every interviewee considered this a **critical** aspect of an MBH setting.
- However, **definition of “homelike” unclear**
  - Not everyone embraces the traditional vision of home; to some the notion may be disturbing
  - The essence of ‘home’ has more to do with feeling welcome and secure.



# Results: 1. Deinstitutionalization

A Veterans Administration staff member stated:

- ▣ *You're dealing with a population that is probably 25% literally homeless, and at least another 25% are sort of homeless, like they're living in somebody's garage or their relative's basement or some place that would hardly seem like home [to many of us].*



Topics Generated from Literature Review	Interview/Focus Group Additional Survey Topics	Combined Content for Design Goals & Future Survey
Deinstitutionalized		Deinstitutionalized
Orderly/organized		Orderly/organized
	Attractive/aesthetic	Attractive/aesthetic
Well-maintained		Well-maintained
Damage resistant furniture		Damage resistant furniture
	Quality landscaping	Quality landscaping
Visual/phys nature access		Visual/phys nature access
	Attractive/comfort furniture	Attractive/comfort furniture
	Good electric lighting	Good electric lighting
Maximum daylight		Maximum daylight
	Noise control	Noise control
Staff safety/security		Staff safety/security
Staff support/respice		Staff support/respice
	Impact of experience	Impact of experience
	Private bathrooms	Private bathrooms
Private/low density rooms		Private/low density rooms
Social interact/community		Social interact/community
Mix of seating		Mix of seating
Autonomy & spontaneity		Autonomy & spontaneity
Patient-staff interaction		Patient-staff interaction
	Positive Distraction	Positive Distraction
	Staff respice	Staff respice
Nurse station observation		Nurse station observation
Indoor & outdoor therapy		Indoor & outdoor therapy
Smoking rooms		Smoking rooms
Suicide resistant furnishing		Suicide resistant furnishing
	Impact of LOS	Impact of LOS
	Impact of unit size	Impact of unit size

# Methods Phase 2 - Survey

- Survey participants were recruited from 4 psychiatric nursing organizations and a behavioral health facility in NYC.
- 17 demographic, 63 Likert-style, 11 ranking, and two open-ended questions.
- 7-point scale ranging from “not important at all” to “extremely important; and from “very ineffective” to “very effective.”
- 20 minutes to complete.



# Importance of environmental qualities & features across all settings

Quality:	<i>M</i>	<i>SD</i>	Orderly	Homelike	Aesthetic	Outdoors	Maintain
Maintained	6.26	.690	.05	ns	ns	ns	--
Outdoors	6.01	.796	ns	ns	ns	--	
Aesthetic	5.92	.947	ns	ns	--		
Homelike	5.88	1.025	ns	--			
Orderly	5.80	.957	--				

**Maintenance most important quality**

**Staff safety most important feature**

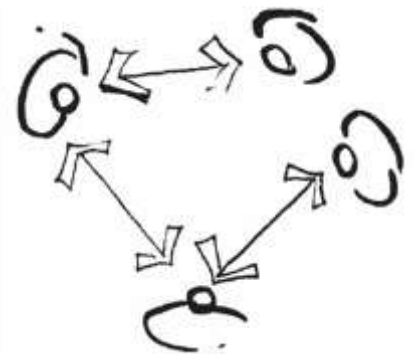
Feature:	<i>M</i>	<i>SD</i>	Attr furnit	Staff resp	Resis furnit	Elec light	Conf furnit	Daylight	Noise cntrl	Staff safety
Staff safety	6.60	.842	.001	.001	.001	.001	.001	ns	ns	--
Noise control	6.38	.742	.001	.05	.05	ns	ns	ns	--	
Daylighting	6.33	.746	.001	ns	ns	ns	ns	--		
Comfort furniture	6.11	.781	.05	ns	ns	ns	--			
Electric light	6.09	.740	.05	ns	ns	--				
Resistant furniture	5.90	1.146	.05	ns	--					
Staff respite	5.87	1.334	.05	--						
Attract furniture	5.53	1.004	--							

# Hypothesis Results

- The **usefulness** of the PSED tool was corroborated.
- **Significant difference** between the perceived importance of desirable features and the degree to which these features were present (effective).

# Controversial Design Guidelines

- No recommendation regarding private vs. shared rooms. We suggest a **majority of private rooms** with semi-private or convertible private rooms.
- Support provided for **open stations**, however, a semi-open station with the flexibility to be fully open after minor remodeling is a thoughtful approach.



# Future Research

1. Outcomes associated with **private versus shared bedrooms**
2. Frequency of incidents associated with **open versus closed nurse stations** is essential
3. Impact of **noise and lighting**
4. Impact of **access to nature**
5. Provision of **staff respite areas**.
6. Potential work with VA....