

Academy of Architecture for Health On-line Professional Development

Trends in Medical Planning, Part 1: Following the Threads Health Care 101 Series

13, February, 2018

2:00 pm – 3:00 pm ET

1:00 pm – 2:00 pm CT

12:00 am – 1:00 pm MT

11:00 am – 12:00 pm PT

Presenter

Hugh J. Campbell, AIA
HOK Architects

Moderator

John Kreidich, AIA, CHC, LEED, AP B+C
McCarthy Building Companies

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Health Care 101 Series

The Academy's multi-channel on-line approach provides emerging professionals, journeymen, and master professionals with convenient and economical opportunities to develop their chosen area of interest.

The HC 101 Series sessions are tailored to provide budding healthcare design professionals with conceptual and practical primer-level knowledge.

Series topics include: Master planning; Programming; Ambulatory care; Clinical support services; Emergency; ICI-acute care; Imaging; Long-term care; Maternal care; Mental health; Surgery.

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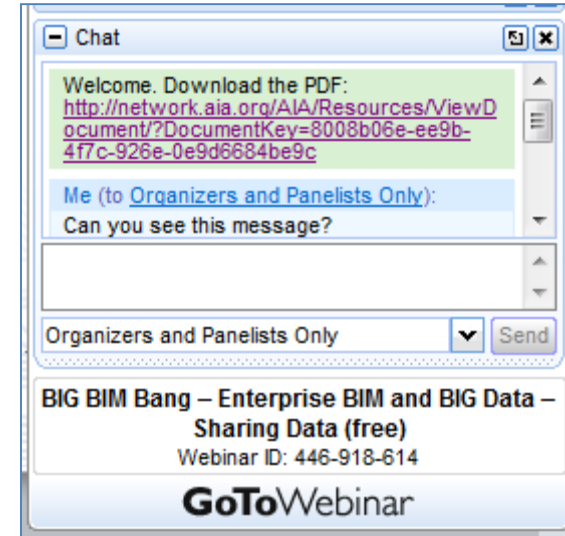
Questions?

Submit a question to the moderator via the chat box.



Content-related questions will be answered during the Q&A portion at the end as time allows.

Tech support questions will be answered by AIA staff promptly.



Trends in Medical Planning: **Following the Threads**

Presenters



Hugh J. Campbell, AIA
HOK Architects



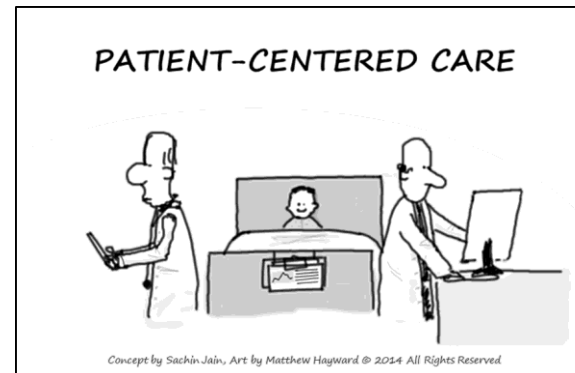
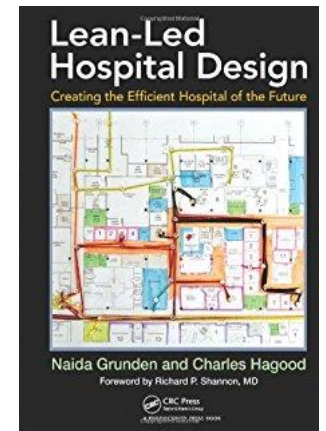
Introduction: Learning Objectives

- Understand the origins of many of today's most important trends in hospital planning. Ideas such as Lean Planning, Infection Control Strategies, Patient Focused Care and other ideas that seem like new ideas have a long history in the medical planning of the last century.
- Understand how the major trends have helped hospital facilities evolve over the years.
- Understand why some of these trends gain traction and then seem to lose favor among planners, only to come back again as a “new idea”.
- Try to judge where these trends are working today and predict how they may influence the next decade of hospital planning.

Introduction: Why This Topic



- Are there NEW Trends?
- What can we learn from the past?
- Why is there no “Right Way”?
- What are the threads to follow?



Introduction: Most Influential Trends

- Infection Control
- Efficiency
- Sustainability
- Healing Environment

INFECTION CONTROL

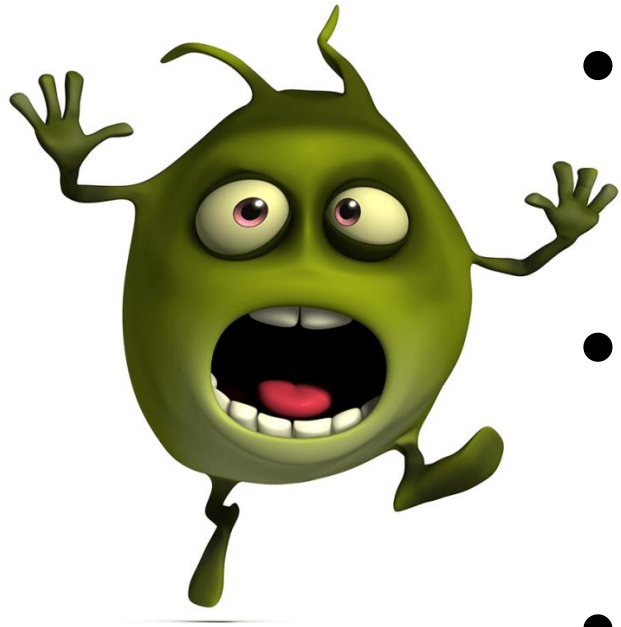


INFECTION CONTROL: Impact on Planning



- Patient Space & Private Room
- Unit Planning
- Natural & Mechanical Ventilation
- Material Selections
- Flow of Materials & Supplies
- Perioperative Flow

INFECTION CONTROL: Science Evolves



- **Antiseptic...**Kill germs on the body
- **Aseptic...**Kill germs before they get to the body
- **Antibiotic...**Kill germs within the body

INFECTION CONTROL: Gordon Friesen. (1909-1992)



Denver Post Archive

- Automated Surgical Sterile Processing
- Developed the Concept of “SPD”
- Operating Room Changes
- Dedicated Clean & Flow Pathways
- Central Patient Supplies Storage & Flow

INFECTION CONTROL: Still Confusing...



- New Disease Threats
 - Aids/HIV
 - Legionnaire's Disease
 - Avian Flu
 - Ebola
- Isolation Ante Rooms
- Direct Flow Through Surgical Lockers
- Material Selections & Maintenance
- "Adequate" Ventilation
- Visitor Policies

EFFICIENCY



EFFICIENCY: Frederick Winslow Taylor



- Principles of Scientific Management
- Factory Production Line
- Evidence Based Design

EFFICIENCY: Nursing Patterns Studies

- Henry Ford Hospital. (1915)
- Yale Traffic Index (1958)
- Lean Spaghetti/Strings Analysis

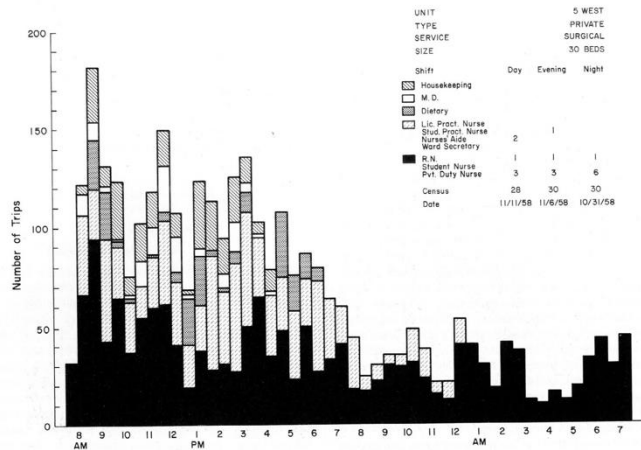


Fig. 248. The Yale Traffic Index: activity level on ward unit 5 West, Yale-New Haven Hospital, during the day, evening, and night shifts.

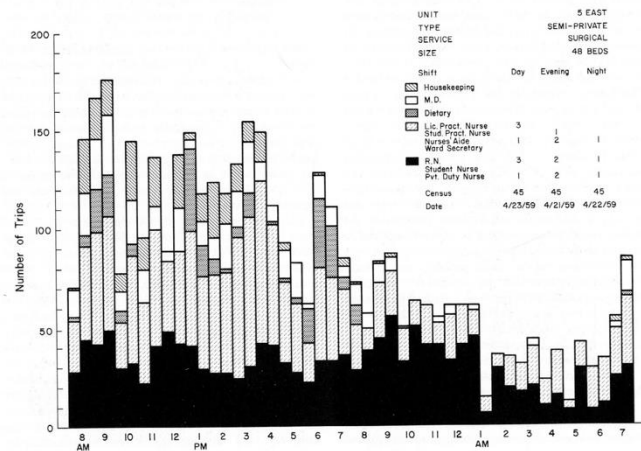
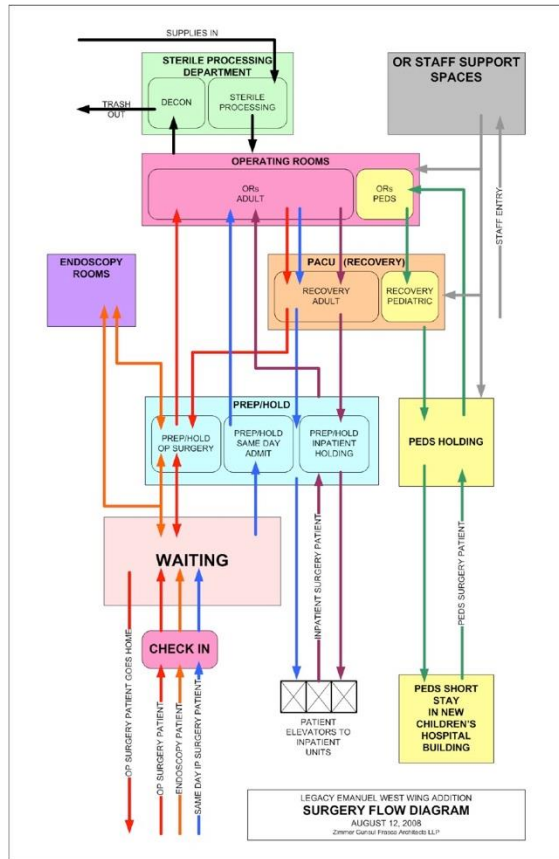


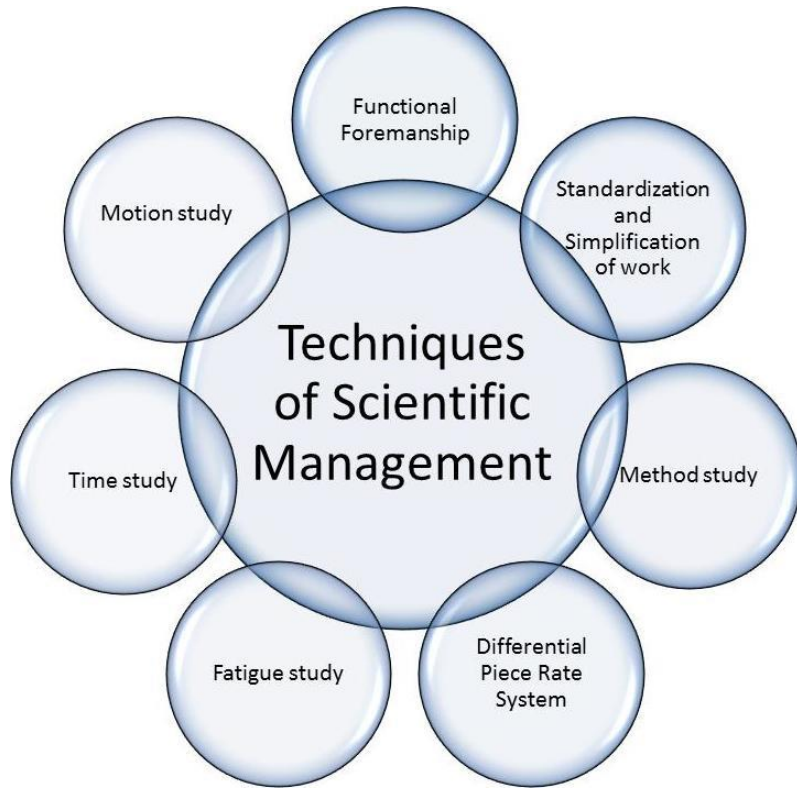
Fig. 249. Activity level, ward unit 5 East.

EFFICIENCY: Gordon Friesen...again!



- The Nurse Server
- Flow Driven Hospital Planning
- Early Lean Concepts
- Team and Decentralized Nursing Services
- Regional Hospital Services
- The “Friesen Hospital”

EFFICIENCY: Pathways to Lean



EFFICIENCY: Standardization



- Books and Magazines
- Hill Burton Act Requirements
- DHHS/FGI Guidelines
- CHI Systems Space Standards

EFFICIENCY: Flexibility & Charles Neergaard



- Flexible Plan Report (1937)
- Private Rooms & Bed Management
- Break Down Social Silos
- Establish Functional Patient Groups
- Patient Focused Care

EFFICIENCY: Flexibility Strategies



- “Temporary” Buildings
- Pavilion Model
- Modular Planning
- Prefabrication

EFFICIENCY: Standardization & Flexibility Policies

Kaiser Template Hospital



VA Interstitial Level Program



SUSTAINABILITY

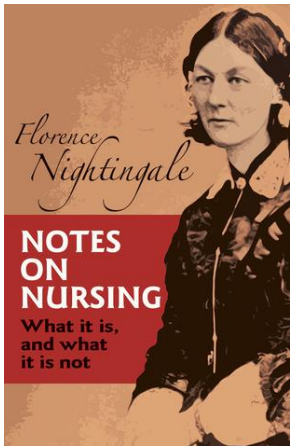


SUSTAINABILITY: Natural Ventilation

"The very first rule of nursing is to keep the air the patient breathed as pure as the external air without chilling him. The question is often asked, 'when ought windows to be opened?' The answer is, 'when ought they to be shut?'"

Florence Nightingale from Notes on Nursing

- Fear of Miasma
- Reduced Energy Consumption Goals
- 100% Outside Air in Infection Control

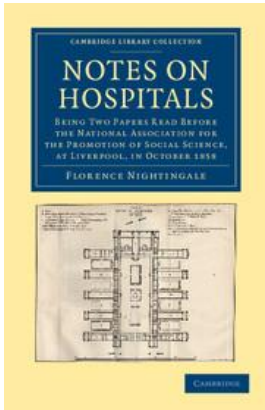


SUSTAINABILITY: Daylight & Nature

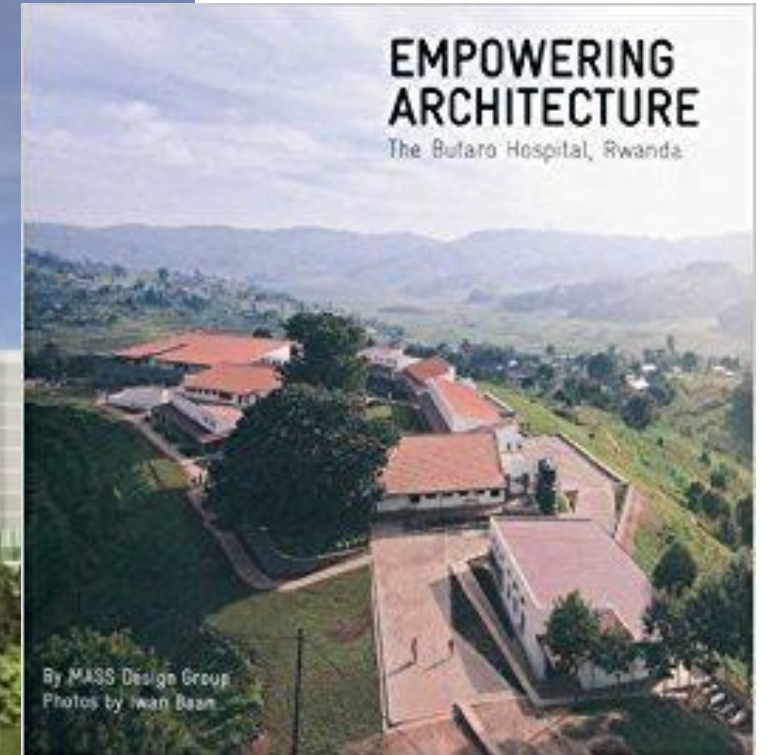
“The axis of a ward should be as nearly as possible north and south; the windows on both sides, so that the sun shall shine in (from the time he rises till the time he sets) at one side or the other. There should be a window to at least every two beds, as is the case now in our best hospitals.”

Florence Nightingale in Notes on Hospitals

- Clinical value of Sunlight
- Antiseptic Value of Sunlight
- Daylight and Energy Conservation
- Impact of Circadian Cycles in Recovery



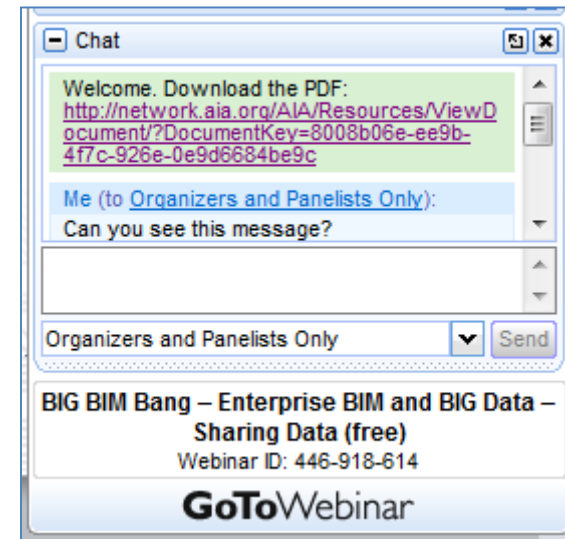
SUSTAINABILITY: Everything old, is new again...



Ng Teng Fong General Hospital, Singapore (HOK Architects 2017)

Upcoming Break for Questions and Comments

Submit a question to the moderator via the chat box.



HEALING ENVIRONMENT



PLANETREE

HEALING ENVIRONMENT: What the patient needs...

SPIRITUAL



MEDICAL



HOME



HOTEL/HOSPITALITY



HEALING ENVIRONMENT: Private Rooms



A PRIVATE ROOM

A Private Patient Room, Hospital of the University of Pennsylvania, 1919

- All private room hospitals were proposed as early as the 1920's. Not just for paying patients.
- Seen as more comfortable and less prone to lead to infections.
- Difficult to manage environment and very inefficient for nurses and other clinicians.
- Ultimate conflict of all our trends...

HEALING ENVIRONMENT: Planetree



- Created in 1978
- Patient Focused Care
- Control of Noise
- Off stage Staff Work Areas
- Patient Library & Family Support Spaces
- Staff Retention Goals

HEALING ENVIRONMENT: Evidence Based Design

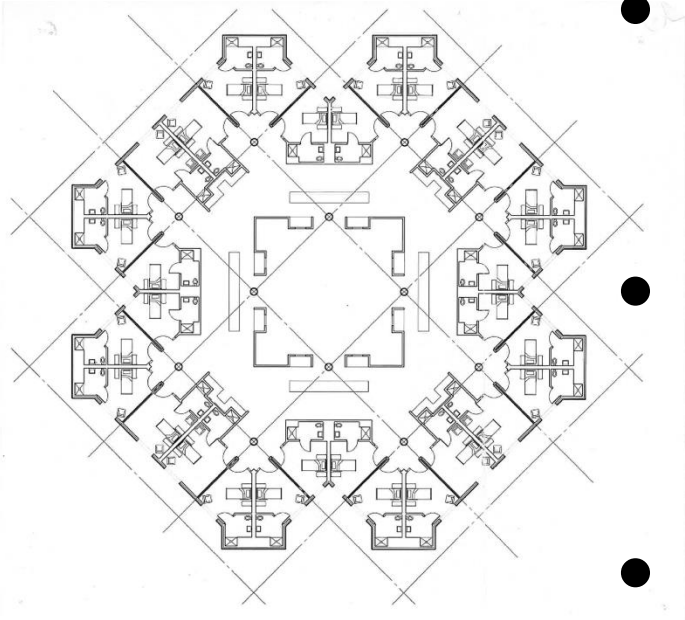


- Florence Nightingale stresses data collection on patient outcomes.
- Roger Ulrich and the Vermont Study (1984)
- EDAC & the Center for Health Design
- Pebble Program

SUMMARY

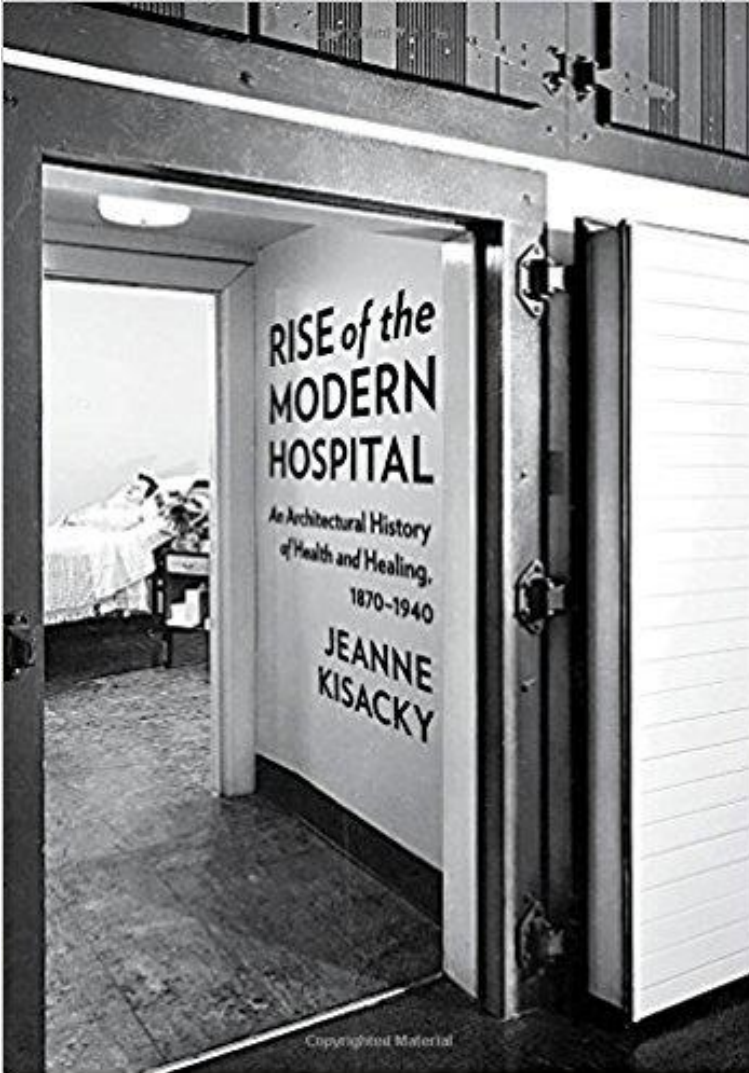


SUMMARY: Webinar Part 2, May 8, 2018



- Evolution of the Patient Ward
- Impact of Trends on Plans
- Where will Trends Lead Us Next?

SUMMARY: Webinar Part 2, May 8, 2018

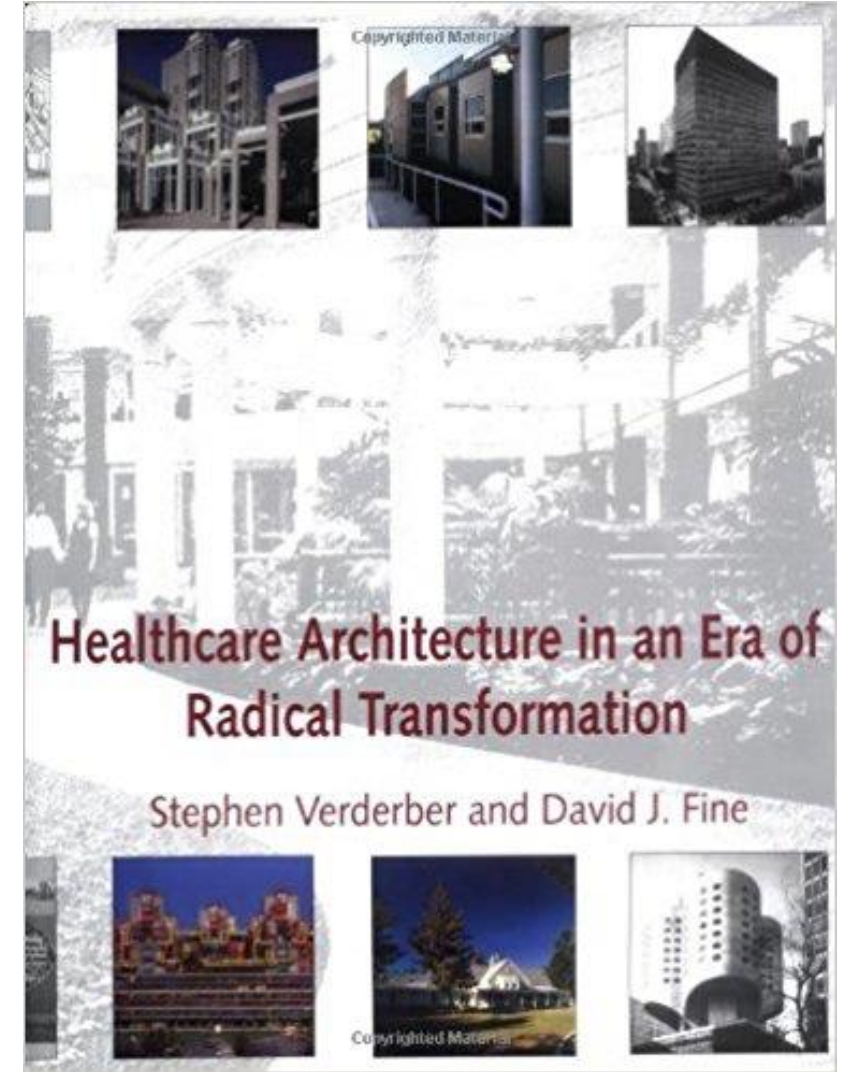


RISE OF THE MODERN HOSPITAL

Jeanne Kisacky

HEALTHCARE ARCHITECTURE IN AN ERA OF RADICAL TRANSFORMATION

Stephen Verderber
& David Fine



Time for Questions and Comments



Moderator

John Kriedich, AIA, CHC, LEED AP B+C

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Date	Series	Topic
3/13	HC 101	CMS – Conditions of Participation
4/10	Masters Studio Series	Hospital Noise Control
5/8	Masters Studio Series	Trends in Medical Planning Part 2: The Inpatient Unit, Weaving the Threads Together

*Dates and topics are subject to change

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