Emerging Trends & Successful Strategies for the Planning and Design of Healthcare Facilities

This Educational Session Presented by:

The American College of Healthcare Architects

Improving medical care Environments through Specialty Certification of Healthcare Architects
Emerging Trends & Successful Strategies for the Planning and Design of Healthcare Facilities
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Continued growth in Healthcare Facilities

- 69% Increase in annual H/C Facility Projects since 1995
- 2005: 20 Billion in new Health Facility Contracts
- Forecast 6.2% growth in 2006

Data: McGraw Hill, Dodge analytics & AIA Construction Forecasting
Building a New Generation of Hospitals

- New Services and H/C Markets
- New Medical Technologies & the “Wired Workplace”
- Support Staffing & Improved Operational Efficiency
- Improved Patient Satisfaction
- Replacing H/C Aging Physical Infrastructure
Emerging Trends & Successful Strategies for the Planning and Design of Healthcare Facilities

Today’s Program Agenda

Part 1: “Lessons Learned from Groundbreaking Hospitals”

- Project Case Studies on Innovative H/C Facilities
- Celebration Health, Griffin Hospital, Northwestern Memorial Hospital and others
- Do’s and Don’ts; Important Lessons Learned
Emerging Trends & Successful Strategies for the Planning and Design of Healthcare Facilities

**Today’s Program Agenda**

**Part 2: “The Bottom Line on Evidence Based Design”**

- Using Facility Planning to Improve Patient Outcomes
- Case Study Examples using EBD
- What’s the ROI on Evidence Based Designs?
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Today’s Program Agenda

Part 3: “Emerging Trends in Imaging, Impacting Health Facility Design”

• The Impact of New Imaging Technologies
• New Planning Strategies for Imaging Systems
• “What If” scenarios for Imaging Technologies
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for the Planning and Design of Healthcare Facilities

Today’s Program Objectives

1. “Virtual Tour” of Innovative Healthcare Facilities
2. Introduce new Facility Planning Strategies
3. Share Critical “Do’s and Don’ts” for your H/C Projects
4. Expected Cost-benefits and Value-added
5. Improved decision-making on your next health facility
Key Lessons Learned from
Groundbreaking Hospitals

Griffin Hospital
Celebration Health
Northwestern Memorial Hospital
Emerging Trends & Successful Strategies for the Planning and Design of Healthcare Facilities

Part One: “Lessons Learned from Groundbreaking Hospitals”

Frank Pitts, AIA, FACHA
• Founding Partner: Architecture +, Troy, New York
• 25 Years experience in Healthcare Architecture
• 2006 President, American College of Healthcare Architects

Donald McKahan, AIA, FACHA
• Principal McKahan Planning Group, Del Mar CA
• 30 Years experience in Health Facility Planning
• Past President, AIA, Academy of Architecture for Health
Genesys Regional Medical Center
Grand Blanc, Michigan

Merger & Relocation of 4 Existing Hospitals

Emerging Trends & Successful Strategies for Healthcare Facilities
Genesys Regional Medical Center

**Basic Statistics**

**Owner:** Ascension Health  
**Architects:** NBBJ  
**Opening:** Feb 1997  
**Project Size:** 379 Beds and MOB  
684,000 SF (Hosp), 123,000 SF (MOB)  
**Const. Cost:** $156/SF, ($174/SF adj. 2002)  
**Major Services:** OP Diagnostic, Emerg, OB & Peds, Surgery, Cardio-vascular, Med/Surg Nursing, Rehab Nursing
**Genesys Regional Medical Center**

**Project Goals**
1. Facility supports “PFC” Care Model
2. Medical Service Centers
3. Central Atrium Connects OP, IP & MOB
4. Efficient Materials Management Circulation
5. Full Electronic Medical Record
Genesys Regional Medical Center

Exterior Images

Hospital Entry
Genesys Regional Medical Center

Atrium Spaces

Retail Services & Food Court
Genesys Regional Medical Center

Patient Rooms

Family Space

Nurse Servers
Genesys Regional Medical Center

Do’s and Don’ts

• Don’t expect Facility design to enforce Operational change. It can only Assist.
• Do make plans for future expansion
Genesys Regional Medical Center

Do’s and Don’ts

- Don’t force Outpatients into Inpatient Settings
- Don’t start a project without “User Buy-in”
Genesys Regional Medical Center

Client’s Message

“Culture eats Strategy.”

“Organizational culture must be accommodated in any strategic or operational redesign of a hospital.”

Tim Keener, Sr. VP
Genesys Health System
Northwestern Memorial Hospital
Replacement Hospital, Chicago, Illinois
Northwestern Memorial Hospital

New Hospital & Outpatient Towers

High-rise Healthcare

Totals 2.1 Million SF
Two Towers: 17 & 22 stories
509 Beds (92 ICU Beds)
32 Operating Rooms
600 Physician Offices
800,000 Outpatient visits / yr
Northwestern Memorial Hospital

Basic Statistics

**Owner:** Northwestern Memorial Hospital

**Architects:** Ellerbe Becket/ HOK/ VOA Associates with Johnson & Lee

**Opening:** May 1999

**Project Size:** 2.1 million SF

**Project Cost:** $580 Million

**Major Services:** Tertiary Medical Center, Teaching Hospital, Major OP Center (Separate Women’s Hospital & Research Facilities)
**Northwestern Memorial Hospital**

**Project Goals**

1. Consolidate NMH Services from 22 different buildings
2. A new facility to support clinical research & education
3. Improve Patient Comfort & Convenience
4. Accommodate new technologies & future growth
5. Create an efficient “Vertical Hospital”
Northwestern Memorial Hospital

Lobby Spaces: Wood Features from Passavant Hospital
Northwestern Memorial Hospital

Retail Components
3 Stories of:
Starbucks, Bank, Gift shops, Food Court, Bakery, Cafeteria

An extension of the neighborhood Retail Shops and Services
Northwestern Memorial Hospital

Surgical Suites:

- 32 OR’s on 2 Floors
- Central Sterile in-between
Northwestern Memorial Hospital

Patient Rooms w/ Hotel amenities
Anticipated vs. Actual

- Expected minimal “visitors” to Retail Services
- Expected an “overbedded” market in Chicago
Northwestern Memorial Hospital

Do’s and Don’ts

- Do consider the “Vertical Solution”
- Do plan for Private Patient Rooms
- Don’t oversize Waiting Areas w/ Private Rooms
- Don’t underestimate Popularity of Retail Services
Northwestern Memorial Hospital

Client’s Message

“The design team articulated our vision in designing an environment that comforts patients…responds to staff and technological needs, and provides superior fiscally responsible healthcare.”

Gary Mecklenburg, President & CEO
Northwestern Memorial Hospital
Celebration Health
Orlando, Florida
Celebration Health

Basic Statistics

Owner: Florida Hospital Corporation
Architects: NBBJ (Architect-of-Record)
           Robert A. M. Stern Architects
Opening: November 1997 (Phase 1);
         August 1998 (Phase 2)
Project Size: 315,000/440,000 sf
Const. Cost: $70,000,000
Major Services: ED, Maternity, Outpatient Surgery, Med-Surg, Wellness Center
**Celebration Health**

**Project Goals**
1. Wellness-focused hospital as integral part of new planned community’s life
2. Express human values & community values
3. Influence change elsewhere
4. Be Dynamic and flexible
5. Showcase for state-of-the-art technologies
Celebration Health

Exterior
Celebration Health

High Tech Test Bed
Celebration Health

Public Space
Celebration Health

Health Center

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Community Response

- Inpatient volume doubled in three years
- Average Daily census up 14% in 2002
- 32% of patients are from out of State
- Market share increased 6% in 2001
Celebration Health

Do’s and Don’t’s

• Do embed flexibility
• Do anticipate the almost unthinkable
• Do be prepared to accept the humbling reality of success without recognition
• Don’t bank on retail.
• Don’t separate the ED from imaging.
Griffin Hospital
Derby, Connecticut
Griffin Hospital

**Basic Statistics**

**Owner:** Griffin Hospital  
**Architects:** The SLAM Collaborative  
**Opening:** 1994  
**Project Size:** 160 beds, 96,000 SF (New), 36,000 SF (Renovation)  
**Const. Cost:** $32,000,000  
**Major Services:** ICU, OB/Gyn, Birthing, Surgery, Wound Center, Ambulatory Surgery, Behavioral
**Griffin Hospital**

**Project Goals**
1. Remake a failing hospital
2. Stop erosion of market share
3. Overcome 32% avoidance rate
4. Successfully implement the Planetree Model
5. Improve patient satisfaction and staff morale
6. Improve ability to recruit staff.
Griffin Hospital

Exterior Images
Griffin Hospital

Family & Patient Spaces

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Griffin Hospital

Library
Griffin Hospital

ICU

Emerging Trends & Successful Strategies for Healthcare Facilities
Anticipated vs. Actual

- Became the Planetree “flagship” ($2,000 ½ day tour becomes a new service)
- Flourished….didn’t just survive (27.5% growth in admissions)
- Market share improved (secured customer index has increased by 12%)
- Patient satisfaction improved from 83 to 98%
- # of claims decreased from 34 down to 17 per annum
- Moved from deficits to being in the black
Griffin Hospital

Staff Recruiting & Retention

• Nursing and clinical turnover is 25% of the national average (4.35% vs 18%)
Griffin Hospital

Community Response

- Perception rate has improved by 45%
- Went from lowest choice of 8 hospitals in 20 mile radius to national leader
Griffin Hospital

Do’s and Don’ts

• Do prototype first
• Do get commitments from top to bottom of the organization….especially administration and nursing.
• Do expect to lose some clinicians early on
• Do expect to pay for important little things ($100,000 per year for art, events, and performances)
• Don’t separate pods and don’t do four bed pods. (6 bed pods would have offered greater flexibility than 4)
• Don’t become hemmed in by your site.
The Salk Institute: East Building
La Jolla, California
The Salk Institute: East Building

Salk Institute for Biological Studies
La Jolla, California
The Salk Institute: East Building

Architect, Louis Kahn & Dr. Jonas Salk
The Salk Institute: East Building
The New York Times
April 28, 1996
ARCHITECTURE VIEW: Imitation That Doesn't Flatter
By Paul Goldberger

HOW DELICATE IS great architecture, that it must be protected not only from its enemies, but also from its friends. Almost everyone who has ever seen Louis Kahn's Salk Institute for Biological Studies admires it as one of the

Concrete Controversy at the Salk
Anshen + Allen's design is not the only aspect of the Salk addition to spark debate.

On Adding to the Salk
by
Michael L. Benedikt
Center for American Architecture and Design
The University of Texas at Austin

Invited essay in Progressive Architecture, October 1993

Whether it is Gwathmey/Siegel at the Guggenheim, or Mitchell Giurgola at the Kimbell, or David Rinehart of Anshen + Allen at the Salk, the problem of adding to a modern masterpiece at once involves two worlds, two perspectives. The first belongs to us all: it is the perspective of culture, art, and architectural history. The second belongs to the owner: it is the perspective of function, technology, and the modern world.
The Salk Institute: East Building

What was the controversy all about?

**Major Territorial Issues:**
1. Salk Institute seen as “Sacred Ground”.
2. Protected “Museum piece”.

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The Salk Institute: East Building

Basic Statistics

Architects: Anshen + Allen
Consultants: MEP: Ove-Arup & Partners
Labs: Earl Walls, Landscape: KTUA
Opening: Feb. 1996
Project Size: 110,000 SF
Const Cost: $ 27 Million ($245/GSF)
Major Services: Meeting Center, Offices, Reception Area, Research “Wet Labs”, Dry Labs, Lab Support Spaces
The Salk Institute: East Building
The Salk Institute: East Building

Do’s and Don’ts

• Don’t let your Medical Facility be seen as “Community Property”.

• Create and document all plans for long-term, future expansion.
Basic Statistics

**Owner:** Sutter Health Care System  
**Architects:** KMD & Silva Strong Architects  
**Opening:** April 1996  
**Project Size:** 30 beds, 63,300 SF  
**Const. Cost:** $171/SF, ($196/SF adj. 2002)  
**Major Services:** OB/Gyn, Birthing, Surgery, Med/Surg Nursing, Orthopedic Clinic
Project Goals
1. Offer “Patient Choice” in 1-hospital town
2. Specialty Center for both Birthing & Surgical Services
3. Specialized Hospital services for SC Clinic
4. Off-campus support services to reduce overhead
Sutter Maternity & Surgery Center

Exterior Images
Sutter Maternity & Surgery Center

Birthing Rooms
Sutter Maternity & Surgery Center

Onsite Mini-Services

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Pharmacy

Stat Lab

Imaging
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Sutter Maternity & Surgery Center

Anticipated vs. Actual

• OB is flat as Surgery volumes grow
• 5 years to reach financial Break-even
• Sutter’s highest Patient Satisfaction Scores
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Sutter Maternity & Surgery Center

Do’s and Don’ts

• Encourage Flexibility and “Scalability”
• You must differentiate “Specialty Centers” from Full-service Hospitals
• Strategic “Nichemanship” can succeed
Children’s Hospital & Health Center,
San Diego, California

“It’s rare that a building accomplishes a complete design statement in it’s form, concept and detail. This project does so.”

Modern Healthcare Awards, Design Jury
Children’s Hospital & Health Center

Basic Statistics

**Owner:** Children’s Hospital of San Diego

**Architects:** NBBJ

**Art Consultant:** Aesthetics Inc

**Opening:** New Addition, 1993

**Project Size:** 114 New beds, 154,000 SF

**Const. Cost:** $151/SF, ($188/SF adj. 2002)

**Major Services:** OP Diagnostic, ED, Surgery, Med/Surg Nursing, Convalescent Care
**Children’s Hospital & Health Center**

**Project Goals**

- Attract Attention to Growing Peds. Hospital
- Support Family-Centered Care Model
- Familiar Environments, Non-institutional
- Use Regional Architectural Themes
Children’s Hospital & Health Center

Exterior Images
Children’s Hospital & Health Center

Garden Spaces

Philanthropy Gardens
Children’s Hospital & Health Center

Healing Arts

Interactive Art

Entry Sculpture
Children’s Hospital & Health Center

Nursing Units
**Children’s Hospital & Health Center**

**Do’s and Don’ts**

- Do include family support spaces in your plan
- Don’t attempt High-risk projects w/ luke-warm support
- Utilize new Research on “Evidence Based Design”
Client’s Message

“Creative facility designs can provide distinct business and market advantage, helping to differentiate a hospital, improve philanthropy & staff recruiting.”

Blair Sadler, Former President, Children’s Hospital & Health Center
Children’s Hospital & Health Center

Community Response

“Our 5-year-old cried when we took him home. He thought Children’s Hospital was Club-Med.”
Hasbro Children’s Hospital
Providence, Rhode Island
Hasbro Children’s Hospital

Basic Statistics

Owner: Lifespan
Architects: Shepley Bulfinch Richardson & Abbot
Opening: February, 1994
Project Size: 190,200 gsf
Project Cost: $35.6 million/ $50.2 million
Major Services: Ambulatory Clinic, ED, PT, Surgery, PICU
Hasbro Children’s Hospital

- 190,200 sf
- 7 Stories + penthouse
- 87 Beds (15 PICU Beds)
- Expandable to 106 beds
Hasbro Children’s Hospital
Hasbro Children’s Hospital

Project Goals
1. Create a child-friendly environment
2. Improve quality of care
3. Improve work environment for care givers
4. Establish an involving process
Hasbro Children’s Hospital
Hasbro Children’s Hospital

The Healing Arts Program
Hasbro Children’s Hospital
Hasbro Children’s Hospital

Storage!
Hasbro Children’s Hospital

Do’s and Don’ts

• Do engage the community, children, families, and donors early in the project
• Don’t forget to engage the nurses
• Don’t undersell storage.
• Do be cautious about diagonal geometries and immutable shapes.
Whitby Mental Health Centre

Whitby, Ontario
Whitby Mental Health Centre

Basic Statistics

Owner: Provincial MOHLTC/Whitby Mental Health Centre
Architects: Crang & Boake/Cannon/Moffat Kinoshita JV
Opening: 1995
Project Size: 500,500 gsf
Project Cost: $90 million/$130 million (CDN)
Major Services: Forensic, Adolescents, Special Population, Psych Rehab, Psychogeriatric Community Response Program/Outpatient
**Whitby Mental Health Centre**

**Project Goals**

1. Decrease stigma: provide a humane and comfortable environment: a place of healing and a threshold to the world beyond.
2. Centralize operationally while maintaining “cottage” feel.
3. Provide access to richer array of program services.
4. Provide visual and secure physical access to outdoor space.
Whitby Mental Health Centre

Houses, Streets and Courtyards
Whitby Mental Health Centre
Whitby Mental Health Centre

Lobby Spaces: Destigmatize! Don’t Say Mental Health
Whitby Mental Health Centre
**Whitby Mental Health Centre**

**Do’s and Don’ts**

- Do pay attention to security zoning and access: crossing the “Street” is tough.
- Do provide public amenities like Conferencing Centers to counter stigma.
- Don’t organize the living space with a nursing station in the middle. It isn’t home-like.
- Do develop sub-units.
- Don’t create separate staff worlds. If staff can hide….they will.
Key Lessons Learned
from these Iconic Projects
Lessons Learned from Groundbreaking Projects

1. Groundbreaking Projects had Visionary Leaders
   - The “Vision-Keeper”
   - Great Communicators
   - Team-Builders

Pat Charmel  Jonas Salk  Bruce Komiske
Lessons Learned from Groundbreaking Projects

Groundbreaking Projects had Visionary Leaders

Hope lies in dreams, in imagination and in the courage of those who dare to make dreams into reality.

Jonas Salk
2. Groundbreaking Projects require:
  - back breaking effort,
  - unwavering support, and
  - extraordinary team-building.
Lessons Learned from Groundbreaking Projects

3. No one got it “exactly” right
   - Innovative projects require more flexibility
   - Traveling in “Uncharted Waters”

Sutter Maternity & Surgical Center
Lessons Learned from Groundbreaking Projects

No one got it “exactly” right

- Don’t “hardwire” your facility design into a single, untested operational strategy.
Lessons Learned from Groundbreaking Projects

4. Bravery counts & costs.
Risk can provide rewards.
- Griffin’s great success
- Celebration’s “hidden” success
Lessons Learned from Groundbreaking Projects

5. “Tomorrow” quickly becomes “Yesterday”
   - Visionary concepts can become problematic
   - Operational Strategies Come & Go but Healthcare Buildings are permanent.

Who remembers?
- Patient Focused Care Teams
- Cross Trained Care-givers
- The EMR is just around the corner
Lessons Learned from Groundbreaking Projects

“Tomorrow” quickly becomes “Yesterday”
New Facilities always need a “back-up plan”

- New Facility w/ EMR? : Keep a paper option
- New Nursing Model? : Ability to revert to Existing
- “Bench-Test” new Ops plans at your existing Facility
Lessons Learned from Groundbreaking Projects

Bibliography:
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