

# Mental Health Design 201

## Emerging Trends and Issues in Mental Health Planning and Design

AIA Academy of Architecture for Health

June 4, 2012



*Troy, New York*









North Shore Long Island Jewish Health System • Tel Aviv Hospital

Architect: Skidmore, Owings & Merrill

10 February 2000





St. Joseph's Healthcare, London































# Mental Health 201: **Class Poll Question 1**

How many Mental Health projects have you already worked on?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4-6
- ☐ 6 or more.

## Mental Health 201: **Class Poll Question 2**

The largest project on which I've worked is:

- ☐ 16 beds
- ☐ 24 beds
- ☐ 50 beds
- ☐ 150 beds
- ☐ 300 beds or more

# Important Current Issues in Mental Health Design

- Federal Funding, Parity and Health Reform
- Treatment Trends
- Patient Safety
- Co-location of Inpatient Types
- Comprehensive Psychiatric Emergency Programs (CPEP's)
- Co-location of Inpatients and Outpatients



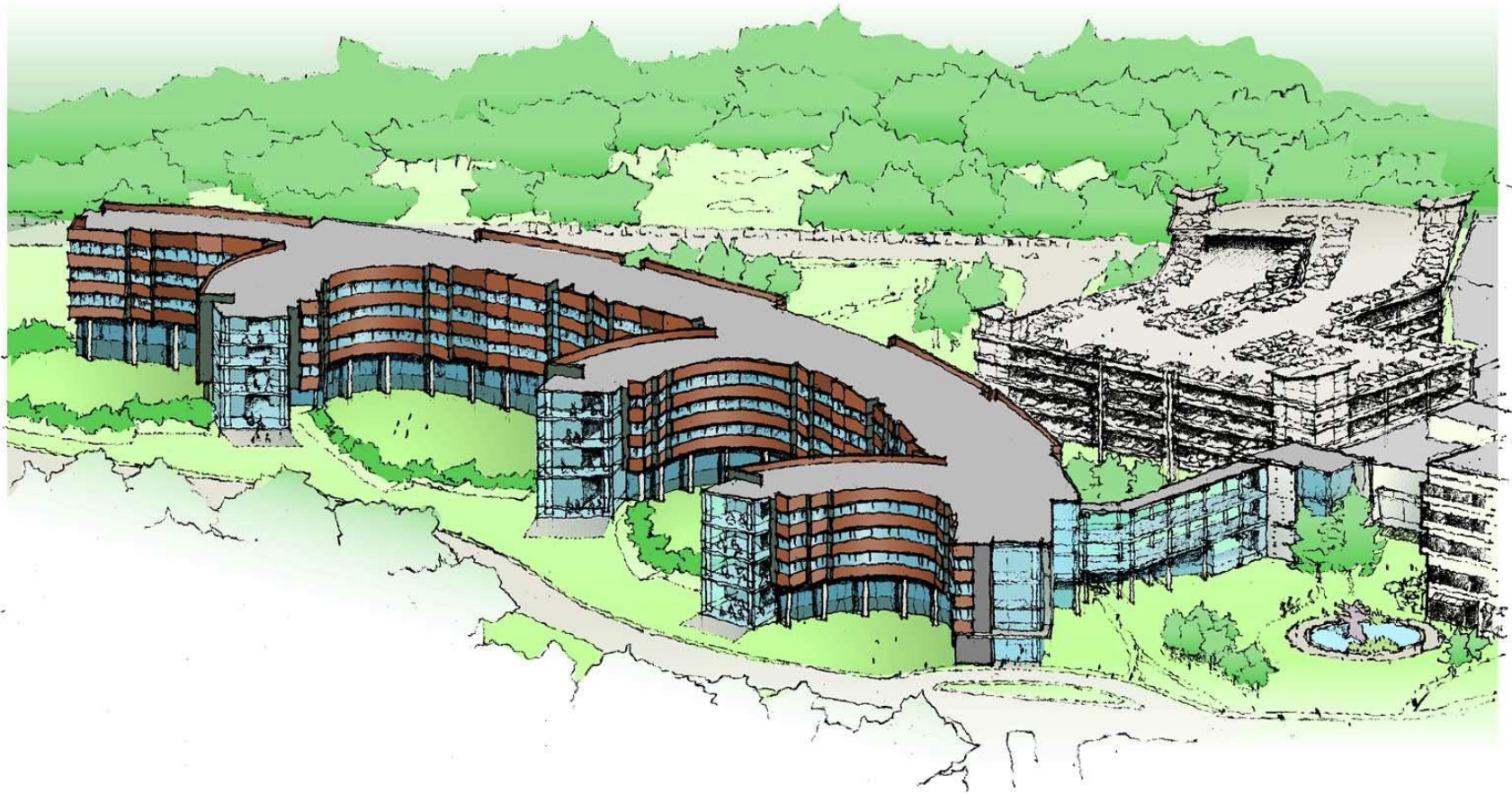
# Funding Implications for Planning: The IMD Exclusion

- What do the initials mean?  
Institutions for Mental Diseases
- What is an IMD?  
Any facility with more than 16 beds providing psychiatric care for patients between the ages of 18 and 65 where more than 50% of the beds are licensed for such care. (This is the simple definition...it's a federal regulation and of course it is more complex than this)
- When was the IMD adopted by Congress?  
For Social Security Insurance: in the 1930's  
For Medicaid Payments: 1965
- Why a 16-bed rule?  
Adopted by Congress in the 1980's after a Supreme Court ruling upholding the IMD as a concession to de-institutionalization.

# Funding Implications for Planning: The IMD Exclusion

- But what about the equal protection clause in the 14<sup>th</sup> Amendment to the Constitution?  
Good question! The 14<sup>th</sup> Amendment only applies to the individual States, not the the Federal Government itself. (But see *Bolling v Sharpe* (1954) for reverse incorporation and due process considerations.)
- Why should an architect care?  
Because it explains otherwise inexplicable organizational phenomena...and you'll want to understand it as a constraint impacting facility planning.

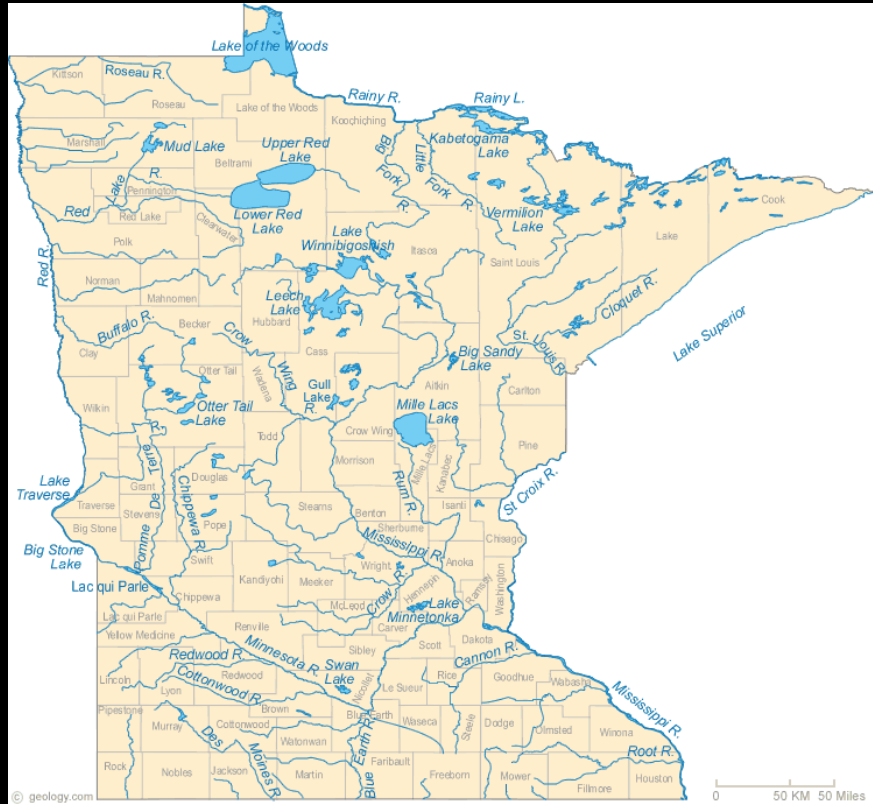
# Funding Implications for Planning: The IMD Exclusion



Case Study: The Hillside Hospital

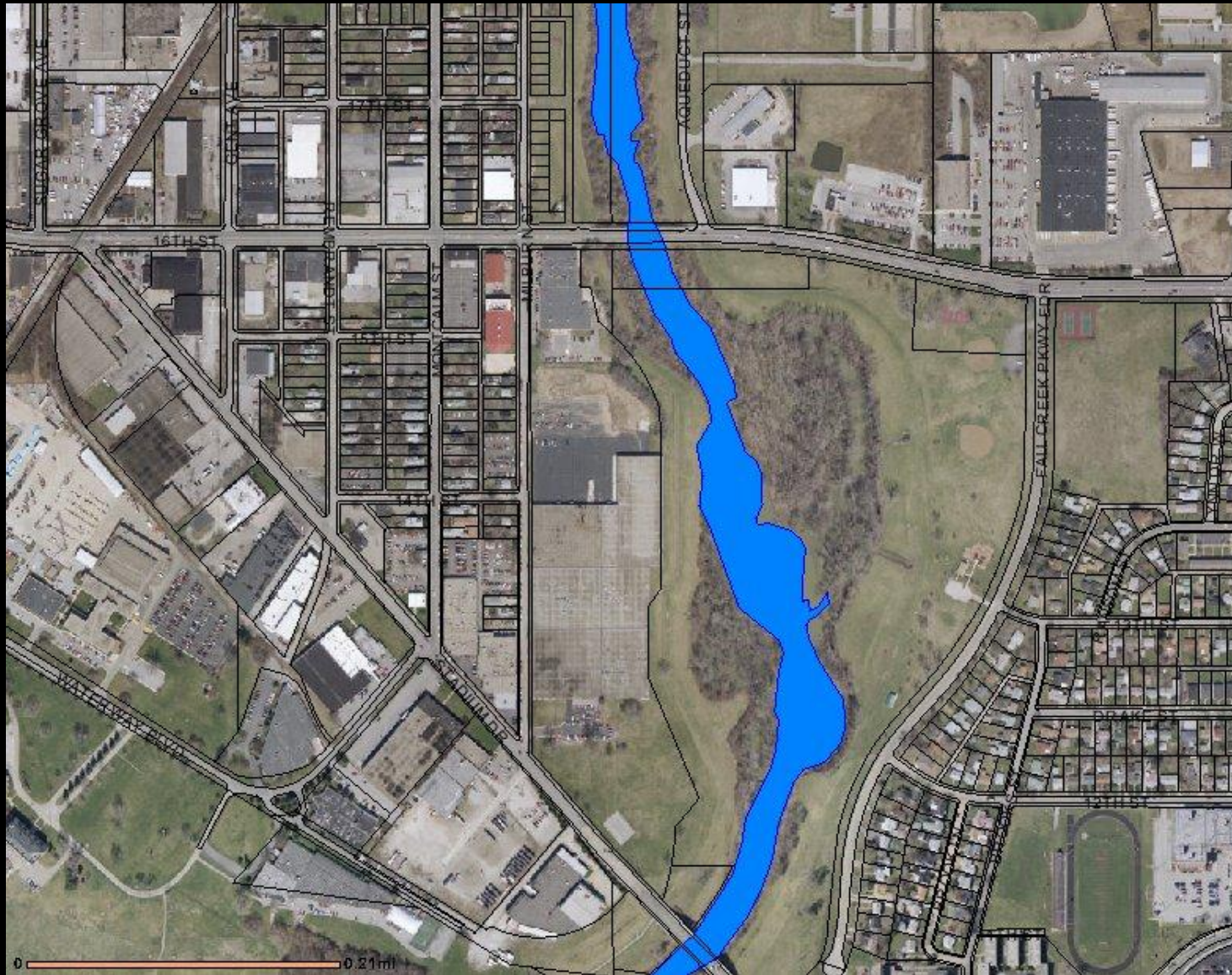


# Funding Implications for Planning: The IMD Exclusion



Case Study: Minnesota and Tennessee

# Funding Implications for Planning: The IMD Exclusion



Case Study: Indianapolis



# Funding Implications for Planning: The IMD Exclusion



Case Study: Vermont A, Fletcher Allen & Dartmouth Hitchcock



# Funding Implications for Planning: The IMD Exclusion



Case Study: Vermont B, Rutland, Brattleboro, Berlin + RTF

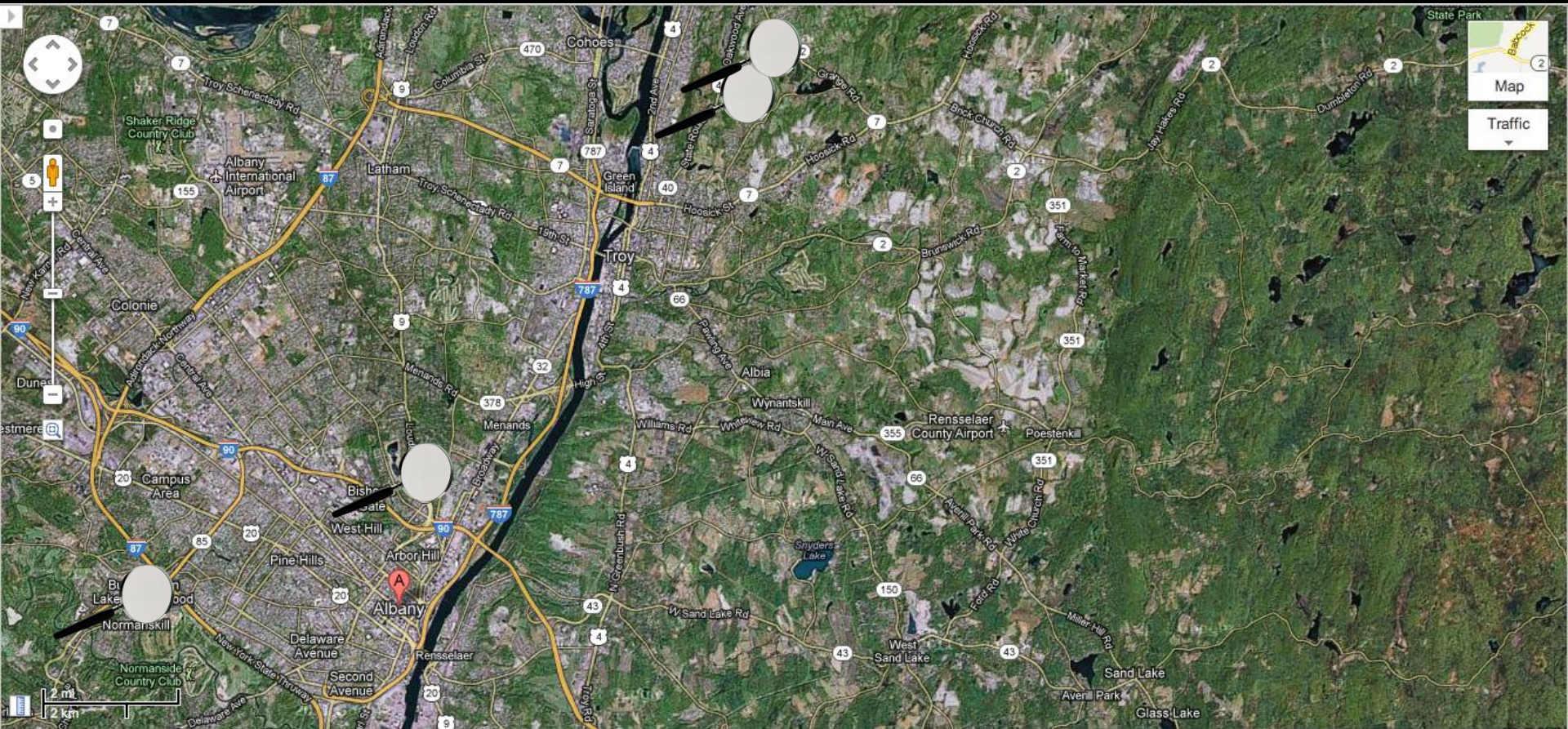
# Funding Implications for Planning: The IMD Exclusion



Case Study: Vermont B, The Scalable Hospital



# Funding Implications for Planning: The IMD Exclusion



Case Study: Saint Peters Partners, Albany and Troy, NY



# Funding Implications for Planning: Research, Reform and Parity

- Evidence-Based Practice
  - ✓ Early detection and treatment
  - ✓ Continuity of care
  - ✓ Least restrictive environments
  - ✓ Recovery
  - ✓ Psycho-social rehabilitation
  - ✓ Co-morbidity
  - ✓ Palliative care
  - ✓ Neuro-Psychiatric Convergence



# Funding Implications for Planning: Research, Reform and Parity

- Health Care Reform
  - ✓ Increased covered care.
  - ✓ Less charity care.
  - ✓ Investments in early detection and treatment.
  - ✓ More continuity of care.
  - ✓ Changes in Service Utilization
    - More ambulatory and outpatient care.
    - More transitional and residential treatment care (RTF)
    - More ED's with CPEP's
    - More Crisis Care/Residences
    - An eventual decrease in long-term care.





# Funding Implications for Planning: Health Care Reform and Parity

- Parity
  - ✓ Increased covered care.
  - ✓ Investments in early detection and treatment.
  - ✓ More continuity of care.
  - ✓ More rehab care
  - ✓ Changes in Service Utilization
    - More ambulatory and outpatient care.
    - More transitional and residential treatment care (RTF)
    - More ED's with CPEP's
    - More Crisis Care/Residences
    - An eventual decrease in long-term care.



**Q&A**

# Treatment Trends: Momentum Towards Active Treatment

- Psycho-Pharmacology
- Movement from Custodial Care to Palliative Care
- Seclusion and Restraint Reduction/Avoidance
- The Neuro-Psychiatric Convergence
  - Imaging
  - ECT
  - TMS
  - VNI





# Treatment Trends: Seclusion and Restraint Avoidance

- What is Seclusion and Restrain?
- Why is it Used?
- Typical Patient Reactions
- Seclusion and Restraint Reduction/Avoidance: General Trends
- State of Pennsylvania Study
- Emergent Policy: Massachusetts, New York
- The “Halfway There” Planning Implications
- Proposed *FGI Guidelines* Changes



# Treatment Trends: Seclusion and Restraint Avoidance



## Guidelines for Design and Construction of Health Care Facilities

### Our Mission:

Promote the process of producing consensus-based guidelines and publications, advised by research, to advance quality health care.

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### The Guidelines



#### 2010 Edition

Purchase the 2010 edition and access the errata sheet and addenda to ANSI/ASHRAE/ASHE 170 from the link below.

[read more](#)

### Revision Process



#### Comment Period to Open in June

Architects, engineers, clinicians, and other interested parties are invited to submit comments starting in June 2012.

[read more](#)

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### Guidelines for Design and Construction of Health Care Facilities

The *Guidelines for Design and Construction of Health Care Facilities* recommends minimum program, space, functional program, patient handling, infection prevention, architectural detail, and surface and furnishing needs for clinical and support areas of hospitals, ambulatory care facilities, rehabilitation facilities, and nursing and other residential care facilities. The document also addresses minimum engineering design criteria for plumbing, electrical, and heating, ventilation, and air-conditioning (HVAC) systems. The Joint Commission, many federal agencies, and authorities in 42 states use the *Guidelines* either as a code or a reference standard when reviewing, approving, and financing plans; surveying, licensing, certifying, or accrediting newly constructed facilities; or developing their own codes.

### User Panel

Welcome Francis M.

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## FGI Guidelines: Proposed Changes

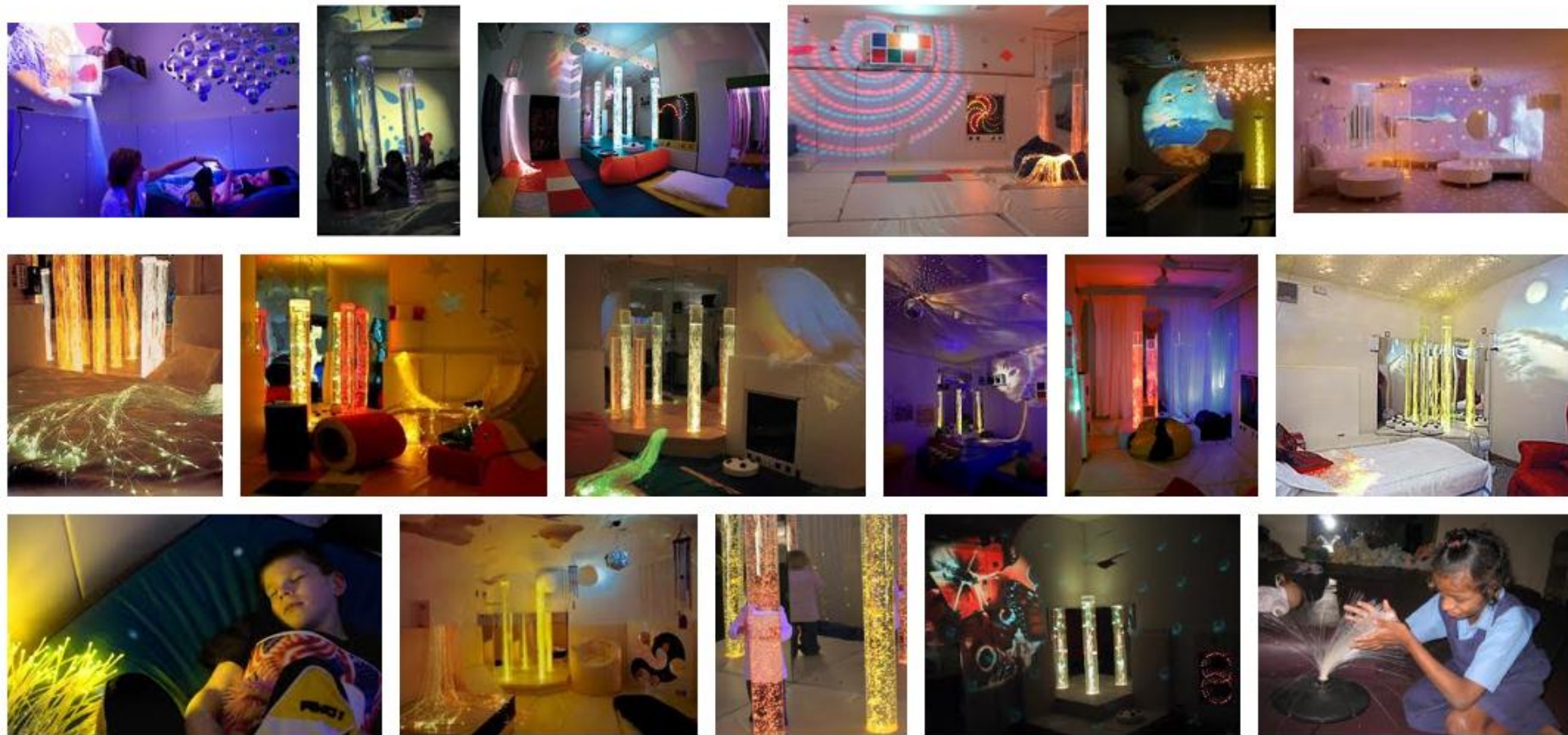
# Treatment Trends: Seclusion and Restraint Avoidance



Case Study: Comfort Room



# Treatment Trends: Seclusion and Restraint Avoidance



Case Study: Snoezelen Room

## Treatment Trends: ECT, TMS and VNI

- ECT: Electroconvulsive Therapy
- TMS: Transcranial Magnetic Stimulation
- VNI: Vagal Nerve Implant



# Treatment Trends: ECT, TMS and VNI



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## Regulatory Guidance: Proposed FGI Guidelines Language



# Treatment Trends: ECT, TMS and VNI



## Case Study: TMS Equipment

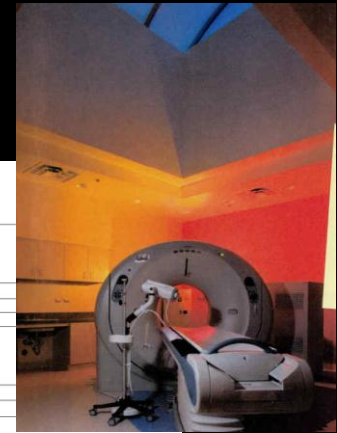
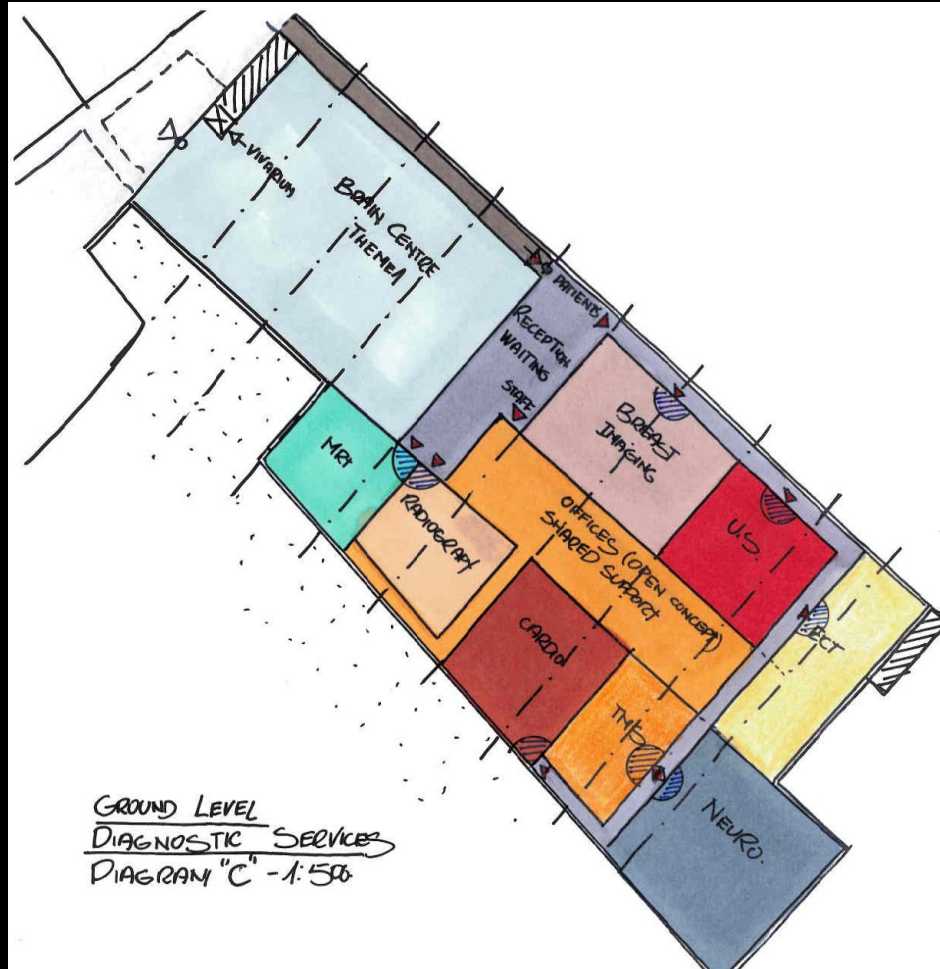
# Treatment Trends: Imaging

- Imaging as a diagnostic and treatment tool
- Utilization: Inpatients vs. Outpatients
- Implication for Paths of Travel
- Implementation Strategies
  - Research Facilities (McLean/Harvard)
  - Colocation with major academic medical center (Hillside Hospital)
  - Colocation with community-based imaging facility (West 5<sup>th</sup> Street Camus, Hamilton, ON)





# Treatment Trends: Imaging



Case Study: St. Joseph's Health, Hamilton, Ontario

# Q&A



## Patient Safety: Poll

What is the largest potential risk to patients at your hospital?

- ☐ Self-harm
- ☐ Harm to others
- ☐ Escape
- ☐ Barricade
- ☐ Contraband

# PATIENT SAFETY STANDARDS, MATERIALS AND SYSTEMS GUIDELINES

**Recommended by the  
New York State Office of Mental Health**

With respect to NYS-OMH operated facilities, these Guidelines apply solely to new construction and major renovation projects. Existing facilities should use these Guidelines as a reference document whenever they make improvements to existing facilities.



7th Edition  
January 31, 2012

New York State  
**omh** **d**<sup>+</sup>  
Office of Mental Health  
New York State Office of Mental Health  
Developed in association with architecture +, Troy, NY

May 2012

**Edition 5.1**



# Design Guide for the Built Environment of Behavioral Health Facilities

by James M. Hunt, AIA, NCARB  
and David M. Sine, ARM, CSP, CPHRM

**Distributed by the  
National Association of Psychiatric Health Systems**

[www.naphs.org](http://www.naphs.org)

# Patient Safety: Guidelines

## NAPHS

"Design Guide for the Built Environment of Behavioral Health Facilities: Edition 3.0"

<http://www.naphs.org/teleconference/documents/DesignGuide3.0FINALUPDATED.8.11.2009.pdf>

New York State Office of Mental Health Patient Safety Standards:

[http://www.omh.state.ny.us/omhweb/patient\\_safety\\_standards/guide.pdf](http://www.omh.state.ny.us/omhweb/patient_safety_standards/guide.pdf)



# **Patient Safety: Clinical Risk Assessment, Variables**

- General Patient Diagnosis and Severity of Symptoms
- Specific Patient Diagnosis and Risk Assessment
- Average Length of Stay
- Staffing Levels and Unit Size
- Unit Geography
- Visibility and Points of Supervision
- Room Location
- Room Usage
  - Will Patients Be Alone in Room?
  - Will Patients Always be Supervised in Room?

# **Patient Safety: Clinical Risk Assessment, Risks Managed**

- Self-Harm
  - Ligation
  - Laceration/Cutting
  - Jumping
  - Burning
  - Electrocution
  - Drowning
  - Pica/Hydrophilic
- Harm to Others
  - Weaponization
- Escape
- Barricade
- Contraband

# Patient Safety: Clinical Risk Assessment, Matrix

## Patient Safety Risk Assessment/Feature Assignment

architecture+

Wake County Continuum of Care, Raleigh, NC

	Self-Harm Risk Level High (Difficult to Manage or Risk of Solitary and Unsupervised Use)	Self-Harm Risk Level Medium (Controlled, Rarely Solitary Use, and/or Regular Supervision)	Self-Harm Risk Level Low (No Patient Use or Constant Supervision)	Anti-Barricade Desired (Yes/No)	Security Window (Yes/No)	Control and Control Level (Hi, Low, Med)	Mono-lithic Ceiling (Yes/No)	Other/Comments
<b>Entrance Point</b>								
Entrance Point, Vestibule			Low	No	No	Low	No	
Entrance Point, Lobby			Low	No	No	Low	No	
Entrance Point, General Waiting (15-18)			Low	No	No	Low	No	
Entrance Point, Triage Room	High			Yes	Yes	High	Yes	
Entrance Point, Public Toilets		Medium		Yes	No	Low	No	
Entrance Point Conference Room			Low	No	No	Low	No	
Routine Assessment, Sub-Waiting Adults (6-8)				Yes	Yes	High	Yes	
Routine Assessment, Sub-Waiting Children		Medium		No	No	Low	No	
Routine Assessment, Consultation Rooms		Medium		No	No	Low	No	Security windows at courtyard
Routine Assessment, Family Meeting Rooms		Medium		No	No	Low	No	Security windows at courtyard
Routine Assessment, Physical Examination		Medium		No	No	Low	No	
Routine Assessment, Patient Toilets		Medium		No	No	Low	No	
Routine Assessment, Clinical Offices			Low	No	No	Low	No	Security windows at courtyard
Emergent Assessment, Sub-Waiting Acute Adults (6-8)	High			Yes	Yes	High	Yes	
Emergent Assessment, Sub-Waiting Acute Children (4-6)	High			Yes	Yes	High	Yes	
Emergent Assessment, Consultation Rooms	High			Yes	Yes	High	Yes	
Emergent Assessment, MSO Rooms	High			Yes	Yes	High	Yes	
Emergent Assessment, Day Space/Lounge (3)	High			Yes	Yes	High	Yes	
Emergent Assessment, Soft Room (Time Out)	High			Yes	Yes	High	Yes	
Emergent Assessment, Physical Examination Room	High			Yes	Yes	High	Yes	
Emergent Assessment, Shower	High			Yes	Yes	High	Yes	
Emergent Assessment, Patient Toilets	High			Yes	Yes	High	Yes	
Emergent Assessment, Holding Rooms	High			Yes	Yes	High	Yes	
Emergent Assessment, Holding Vestibule		Medium		No	No	Low	No	
Emergent Assessment, Holding Toilet/Shower	High			Yes	Yes	High	Yes	
Emergent Assessment, Sally Port		Medium		No	No	Low	No	
Emergent Assessment, Clinical Offices			Low	No	No	Low	No	
Housekeeping			Low	No	No	Low	No	
Clean Utility			Low	No	No	Low	No	
Soiled Utility			Low	No	No	Low	No	



# Patient Safety: Clinical Risk Assessment

## Process: Risk Assessment

### Typical High Risk Areas:

Patient is difficult to manage, or risk of solitary and/or unsupervised use:

- Patient Bedrooms
- Bathroom/Toilet Rooms
- Seclusion Rooms

*Special care should also be taken in on-unit patient spaces with ceilings with less than 9'-0" above finished floor.*

### Typical Medium Risk Areas:

Patient access is controlled, or use is supervised with no solitary unsupervised use.

- Living Room
- Dining Room
- Group Room

### Typical Low Risk Areas:

No patient use or constantly supervised.

- Medication Room
- Offices
- Clean and Soiled Utility Rooms

# Patient Safety: The New Normal



# Patient Safety: Product Evolution, Anti-Barricade



[www.intastop.com](http://www.intastop.com)



## Removable Stop (RDS)

Intastop Continuous Removable Doorstop provides emergency outward opening operation of doors that normally open inwards. Hinge has a hospital tip. Unlocks by key and swings open with integral grab handle.





# Patient Safety: Product Evolution, Anti-Barricade



## Wicket Door

C/S Acrovyn Patient Safety Door



### General Notes | Anti-Barricade Hardware:

Primary door requires continuous hinges with hospital tips.  
Edge bevel may need to be increased.  
Edge strip is friction fit and has potential to come loose.  
Inner door lacks stop and rattles at dead bolt.



## Wicket Door

Hollow Metal Construction



## Specialty Doors, Wicket Door

Wood Construction



The gap around the wicket door must be detailed to avoid ligature.



# Patient Safety: Product Evolution, Anti-Barricade

**CURRIES**

**ASSA ABLOY**

[www.curries.com](http://www.curries.com)



**Security/Privacy Sidelite Door**



[www.cecodoor.com](http://www.cecodoor.com)



**Security SideLite**



# Patient Safety: Product Evolution, Door Hardware



## Ligature Resistant Hardware



[www.bestaccess.com](http://www.bestaccess.com)



### Ligature Resistant Lever Set and Thumb Turn SPSL Series



<http://townsteel.com>



### Mortise Locks MRX Series MRX-L



### Ligature Resistant Privacy Bolt



## Patient Safety: Product Evolution, Door Hardware



# Patient Safety: Product Evolution, Door Hardware

**Accurate**

Lock and Hardware

[www.accuratelockandhardware.com](http://www.accuratelockandhardware.com)

## Crescent Handle (CH)

Specify with 0.010" thick teflon pad to minimize possible ligature point between crescent handle and escutcheon plate.



**ASSA ABLOY**

"Wave": Sargent BHW

# Patient Safety: Product Evolution, Glazing

## Polycarbonate Glazing



**FOR USE AS INNERMOST LITE OF EXTERIOR WINDOW**  
**Sabic Lexan SL-4855**  
with NYS- OMH 15 yr Warranty (Substitute Lexan MR10 with Marguard II-UV coating for non-NYS projects)  
1/2" thick



## Laminated Glazing



**FOR USE AS INNERMOST SURFACE OF EXTERIOR WINDOW**

**Oldcastle Building Envelope:**  
**3/8" ArmorProtect 161000**  
No 1 surface: 5/32" heat-strengthened glass  
No 2 surface: 0.090" DuPont 3/8" ArmorProtect 161000 Plus interlayer  
No 3 surface: 5/32" heat-strengthened glass  
No 4 surface: 3M Ultra 600 anti-spall film installed to edge of glass

**Note | Maintenance:** 3M film is scratchable and may be removed from the laminated glass panel and new film may be installed by trained maintenance staff. Curing time for film installation is two weeks minimum. Maintenance staff should be advised to keep spare stock that is fully cured to eliminate down time.






# Patient Safety: Product Evolution, Windows

AAMA 501.8-12

Committee Approval Out for Re-Ballot (#516-12)	Product Group Approval
---	------------------------

PUBLICATION NO.  
AAMA 501.8-XX  
DRAFT #6  
DATED 2/28/12

Standard Test Method for Determination of  
Resistance to Human Impact of Window  
Systems Intended for Use in Psychiatric  
Applications

---

**DRAFT**

---

## Patient Safety: Product Evolution, Windows



# Patient Safety: Product Evolution, Door Sensors

## DIVISION 08 | OPENINGS, DOOR HARDWARE

Door Control Services, Inc.



Top Door Alarm®



[www.doorcontrolsusa.com](http://www.doorcontrolsusa.com)



### Door Top Alarm



Pressure Sensors and Photoelectric Sensor:  
Photoelectric Sensor detects ligature ahead of pressure application. Pressure Sensors provide secondary back-up detection.



Top Door Alarm is a custom-manufactured alert system that can be installed on new or existing applications.

#### Pressure Sensors:

The system uses 2 pressure sensors, one mounted on each side of the door. The sensors are discreet and designed to replicate a seal so as not to draw attention to the unit.

#### Photoelectric Sensor:

Positioned on the door frame within an anti-ligature casing, the photoelectric sensor ensures maximum coverage by detecting the presence of any foreign object interrupting the thru-beam between the transmitter and receiver.

#### General Notes | Door Top Alarm

Two configurations of this product are accepted:

Configuration A: Combination of Door Top Alarm Pressure Strip and Alarm Light Sensor

Configuration B: Two sets of Alarm Light Sensors

#### Installation Notes | Pressure Activated Switch:

Electric transfer hinge required - refer to continuous hinges page in this document.

Alarm annunciation may be visual and/or audio, located at door and/or nurse's station.



# Patient Safety: Product Evolution, Door Sensors

## DIVISION 08 | OPENINGS, DOOR HARDWARE



### SEDA™ Emergency Door Alarm



[www.stanleyhardware.com](http://www.stanleyhardware.com)

SEDA pressure activated switch, mounted on face of a door, provides notification when a foreign object passes over the door and a downward pressure is applied. Notification is sent to a console indicating where a response is required.

#### Cautions:

##### Looping:

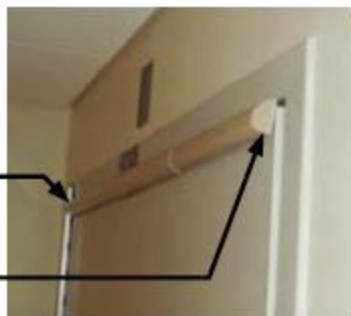
Extend continuous hinge past door on frame to eliminate ligature point

##### Looping:

Specify with end cap adaptor to eliminate ligature point

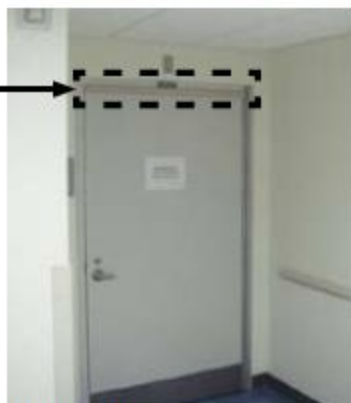
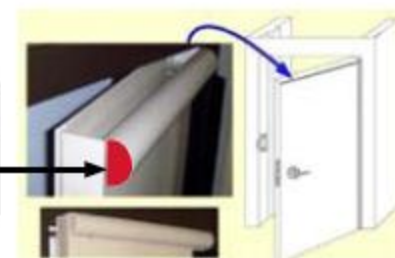
##### Looping:

Can be continuously looped end-to-end



##### Wedging:

Extend continuous hinge past door on frame to eliminate ligature point



#### Installation Notes | Pressure Activated Switch:

Electric transfer hinge required - refer to continuous hinges page in this document.  
Alarm annunciation may be visual and/or audio, located at door and/or nurse's station.  
Install alarm reset at door - requires staff response to alarm location.

# Patient Safety: Product Evolution, Self-Draining Grab Bar



## NW Speciality - Security Bar (Horizontal and Vertical)

Avoid end to end tie-offs by running continuously from wall to wall or by adding sloping end caps as shown. The specifier must indicate how many end caps are needed to establish ligature resistant end conditions. Specify pre-drilled weep holes, 3/64" diameter maximum or use special draining end cap provided by Safebar.



# Patient Safety: Product Evolution, Toilet Paper Dispenser

## DIVISION 10 | SPECIALITIES | Toilet Accessories - Toilet Paper Dispenser

**EVANS & PAUL**

Engineered Surfacing Solutions

[www.evansandpaul.com](http://www.evansandpaul.com)



### Ligature Resistant Surface Mounted Toilet Paper Dispenser



### Ligature Resistant Recessed Toilet Paper Dispenser



#### Notes | Toilet Accessories:

Solid polymer housing with flexible neoprene spindle.

Single and double roll dispensers available for both recessed and surface mounted models.

Flexible neoprene spindles disengage from housing under pressure.

ENP-TPD01 Series

7th Edition | January 31, 2012



# Patient Safety: Product Evolution, Sprinklers

## DIVISION 21 | FIRE SUPPRESSION | Sprinklers



<http://tyco-fire.com/>



### Star Sprinkler TFP PH2



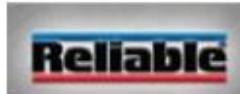
Star Sprinkler is a Division of Tyco Fire Suppression & Building Products

**Weaponization/Ingestion:**  
Removable parts cause potential safety danger for ingestion or weaponization.

**Nuisance:**  
Access to mechanical parts may activate sprinkler.

#### Ligature Notes| Sprinklers:

A portion of the sprinkler heads shown project below the sprinkler head enclosure and is accessible to patients.



<http://reliablesprinkler.com>



### Model XL Institutional Sprinklers



Model XL INST Pendant



Model XL INST Horizontal Sidewall



[www.vikinggroupinc.com](http://www.vikinggroupinc.com)



### Institutional Flush Sprinklers



VK410  
Pendent Sprinkler

**Maintenance:**  
The Viking heat sensor projects below the escutcheon plate. Damage to heat sensor will activate system



VK412  
Sidewall Sprinkler

**Maintenance:**  
The Viking heat sensor projects below the escutcheon plate. Damage to heat sensor will activate system



# Patient Safety: Product Evolution, Sprinklers



<http://tyco-fire.com/> 

## TYCO Raven

Pendent & Horizontal Sidewall  
Sprinklers: Quick Response & Extended  
Coverage



# Patient Safety: Product Evolution, Showers

Niekamp  
Tool Company

[www.niekampinc.com](http://www.niekampinc.com)



## Suicide Prevention Shower Handle - SSK-1022E



### Configuration | Niekamp

When installed in conjunction with a quick release hand shower provide a diverter valve similar to the Niekamp or Oddball, or provide separate controls for both the shower head and the hand-held device.

### Maintenance | Niekamp

This solution does not meet ADA criteria for graspability.

### Maintenance | Niekamp

May be difficult to operate when wet.

Odd Ball Industries Mfg. Co., Inc.

[www.oddballindustries.com](http://www.oddballindustries.com)



## SP-10 Shower Mixing Valve



### Configuration | Oddball

When installed in conjunction with a quick release hand shower provide a diverter valve similar to the Niekamp or Oddball, or provide separate controls for both the shower head and the hand-held device.

### Maintenance | Oddball

This solution does not meet ADA criteria for graspability.

### Maintenance | Oddball

May be difficult to operate when wet.



[www.besafeord.com](http://www.besafeord.com)



## Speakman-BSP

Anti-Ligature Shower Valve, Handle, & Escutcheon Plate





# Patient Safety: Product Evolution, Showers



[www.armstronginternational.com](http://www.armstronginternational.com) 

## Brainwave Water Temperature Control



### Configuration | Brainwave

Stainless steel face plate is to be used in all NYS OMH Facilities.

The Brainwave plastic cover is available and is accepted by some users, but should be used with caution.

### Maintenance | Brainwave

The control buttons are plastic and potential to be damaged.

# Patient Safety: Product Evolution, Lavatories

## DIVISION 22 | PLUMBING | Lavatory Assembly

### DESCRIPTION:

Proposed OMH Standard:

Niche mounted sink projecting from counter with integral pipe screening below.

Integral bowl with Kohler Laminar faucet and Infrared or Armstrong Brainwave controls. (Use Acom's Hemispheric Bubbler and Hemispheric Push Button, Evans and Paul ENP-ALC with Brainwave Controls or Behavioral Safety Products SF370 as an Alternative)



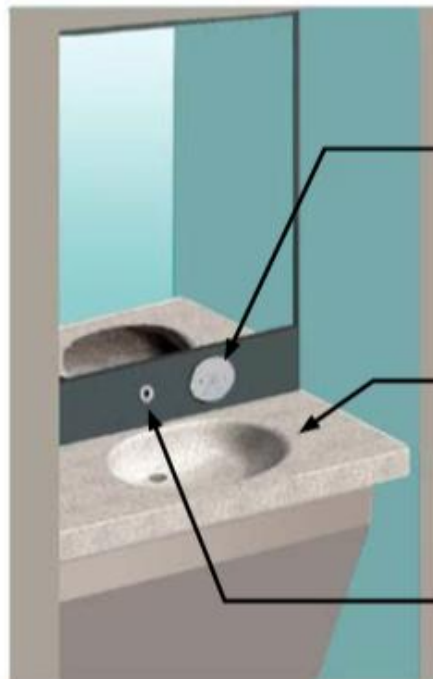
NICHE SECTION



ELEVATION



PLAN



Activator



[www.armstronginternational.com](http://www.armstronginternational.com)

Brainwave Temperature Controls

Sink & Counter  
Acorn Meridian  
Integral Countertop



[www.acorneng.com](http://www.acorneng.com)

Faucet



**KOHLER**

[www.kohler.com](http://www.kohler.com)

Laminar Faucet K-922

### Configuration | Lavatories:

Use of sinks with engaged counters resists ligature only when engaged side to side by knee-walls or niches as shown. Laminar Flow provides a controlled jet of water arching out of hole in wall. (Modify parts of Kohler Laminar Faucet Assembly K-9022).



# Patient Safety: Product Evolution, Lavatories

## DIVISION 22 | PLUMBING | Lavatory Basin Assembly System

**EVANS & PAUL**

Engineered Surfacing Solutions

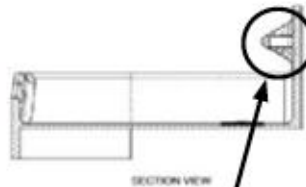
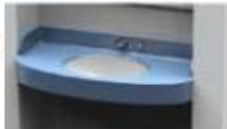
[www.evansandpaul.com](http://www.evansandpaul.com)



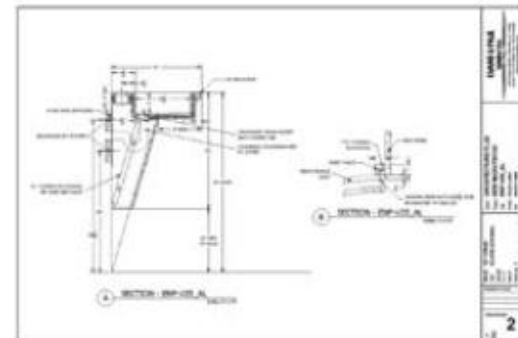
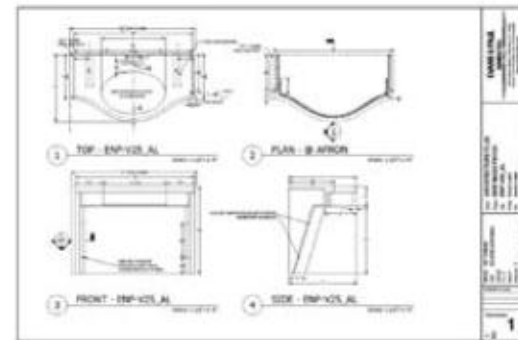
### Solid Surface Lavatory with Integral Bowl

Custom ligature resistant solid surface lavatory with integral bowl. Removable fully enclosed pipe enclosure / skirt with hexalobular pin-reject screws.

Install in niche only.



SECTION VIEW



### Conical Faucet ENP-ALCF



#### Configuration, Code & Regulations Notes | Lavatories:

Not all configurations shown above are ADA compliant. Provide a handicapped accessible configuration where handicapped accessibility is required. Exact profile and location of bowl within counter may be customized.



# Patient Safety: Product Evolution, Toilets

## DIVISION 22 | PLUMBING | Flushometers



[www.sloanvalve.com](http://www.sloanvalve.com)

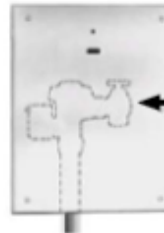


### Royal Optima 143 ES-S

Concealed, sensor activated flushometer - wall hung back spud

### Regal 154

Concealed, push button flushometer - floor mounted back spud

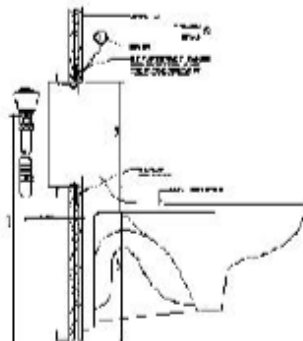


**LIGATURE:**  
Concealed Valves with Infrared controls and override reduce looping opportunities.

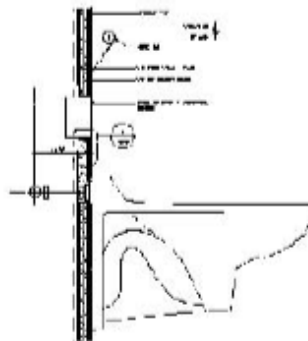


**Illustration | Concealed flush valve assembly with remote infrared sensor**

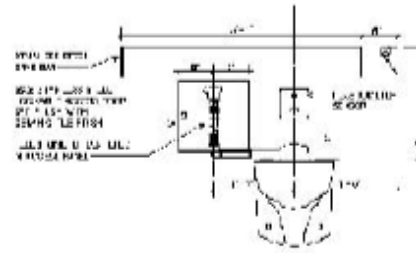
Illustration shows an American Standard Afval Toilet with a Sloan Flush Valve (as shown on previous page).



Section through grab bar and flush valve access door, showing offset flush valve.



Section through grab bar, IR sensor cover plate and flush valve tail piece



Elevation of toilet, grab bar, access door and IR sensor cover plate.

Listed manufacturers indicate ability to accomplish offset installations to avoid conflict with grab bars.

Verify with each manufacturer the specific requirements for offset plumbing extensions, access door sizes and positioning, and remote IR sensor connections and cover plate dimensions.

Provide access door with plaster frame to allow for door installation flush with adjacent tile.

Manufacturer supplied IR cover plate may be for surface mounting, and will require customization for flush installation.

### Configuration & Installation Notes | Plumbing:

Access doors and Infrared (IR) sensor cover plates are to be fully recessed so that faces are flush with adjacent finish materials, to avoid exposed sharp corners, to avoid picking at edges and to avoid possible ligature points.

Offset concealed flush valve with recessed access door and remote IR sensor with recessed cover plate, all arranged to avoid conflict with ADA grab bars.

# Patient Safety: Product Evolution, Toilets

## DIVISION 22 | PLUMBING | Flushometers



[www.zurn.com](http://www.zurn.com)

### Zurn AquaSense AV ZER6140AV

AquaSense AV Concealed Sensor  
Operated Battery Powered Flush  
Valve with Exposed Back Spud for  
Water Closets

### Zurn AquaSense AV ZER6152AV

AquaSense AV Concealed Sensor  
Operated Battery Powered Flush  
Valve for Water Closets



[www.hydrotek.com](http://www.hydrotek.com)

### Hydrotek 8000 Series



#### HB8100-A1

Concealed Sensor Operated AC  
Powered Flush Valve

#### HB8100-B1

Concealed Sensor Operated  
Battery Powered Flush Valve



#### Configuration & Installation Notes | Plumbing:

Access doors and Infrared (IR) sensor cover plates are to be fully recessed so that faces are flush with adjacent finish materials, to avoid exposed sharp corners, to avoid picking at edges and to avoid possible ligature points.

Offset concealed flush valve with recessed access door and remote IR sensor with recessed cover plate, all arranged to avoid conflict with ADA grab bars.

# Patient Safety: Product Evolution, Lighting

## DIVISION 26 | ELECTRICAL, Light Fixtures

### General Illumination

### Wall Mounted - Surface Fixtures



<http://kenall.com>



### Mighty Mac™ WCBU Series

#### Design Attributes:

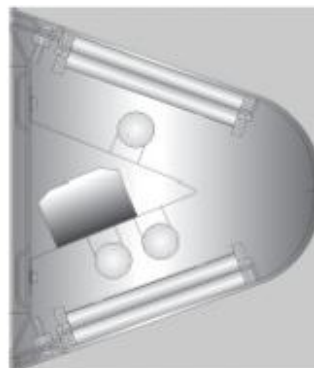
Housing:  
18 gauge Stainless Steel

Diffuser:  
0.125"/0.375"/0.500" polycarbonate  
lens with tamper-resistant fasteners.

Light Source:  
32T8 CF Lamps- dimmable

Approvals:  
UL Listed for damp locations.

\* Should be ordered with  
polycarbonate diffuser





# Patient Safety: Product Evolution, Electrical Power

YouTube

Search

Browse

Edit Info Enhancements Annotations

## Tamper Resistance, Arc Fault, and Ground Fault.

FrancisPitts Subscribe 1 video



0:09 / 11:18

CC Settings

The video player displays a scene with two men in a clinical or laboratory setting. The man on the left, wearing glasses and a light blue button-down shirt, is looking towards the man on the right. The man on the right, wearing a tan short-sleeved button-down shirt, is gesturing with his hands while speaking. They appear to be engaged in a discussion or demonstration. The background is a plain white wall with a blue textured panel visible on the left.

<http://www.youtube.com/watch?v=cBjIEldOEml>

# Q&A

# Mixing the Unmixable: **The Why's and How's of Co-location**

## Flexibility:

Embedded Reuse  
Options

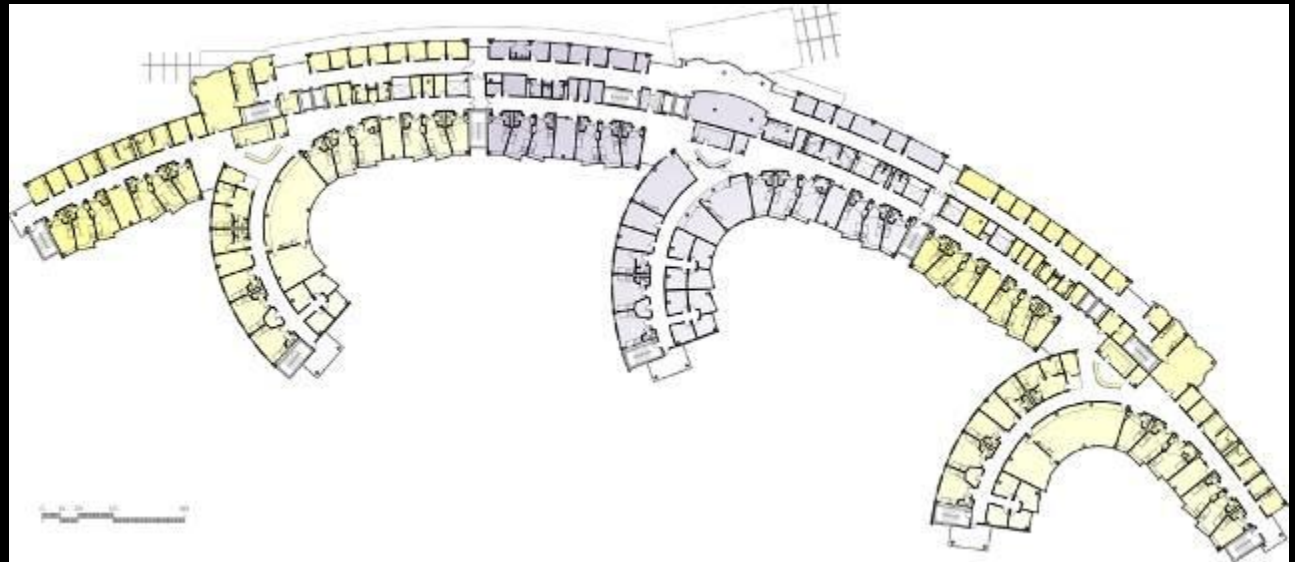
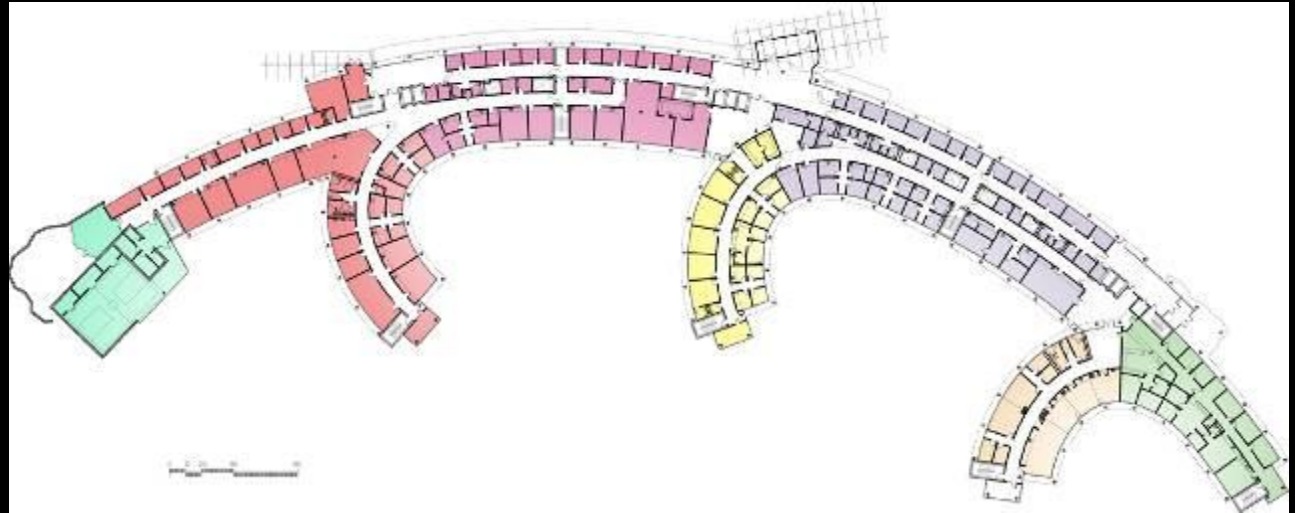
Flex Beds

Flexible Floor Plate

Anticipate Growth

Template Units

Co-location





# Mixing the Unmixable: **The Why's and How's of Co-location**

## Populations

- Adult: Civil
- Adult: Forensic
- Geriatric
- Children and Adolescents

## Issues

- Stigma
- Safety
- Security

## Opportunities

- Capital Costs
- Staffing Costs
- Quality & Diversity of Care
- Flexibility



# Mixing the Unmixable: **The Why's and How's of Co-location**

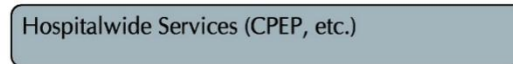
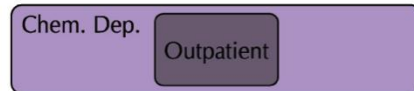
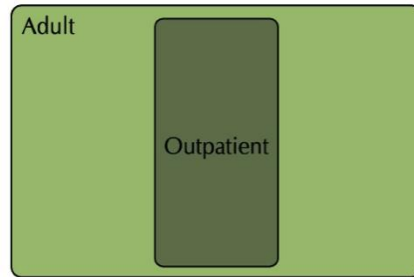
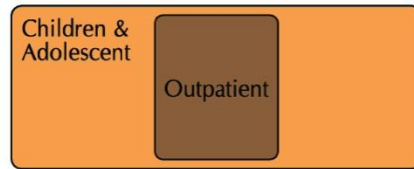
## Strategies

- Separate Entrances
  - Site
  - Building
- Visual Differentiation
- Securable Intermediate Zones
  - Shared Clinical Services Zones
  - Shared Specialized Activities Zones
- Discrete and Zoned Vertical Circulation
- Horizontal Movement of Support Services at Basement
- Discrete and Separate Outdoor Areas



# Mixing the Unmixable: The Why's and How's of Co-location

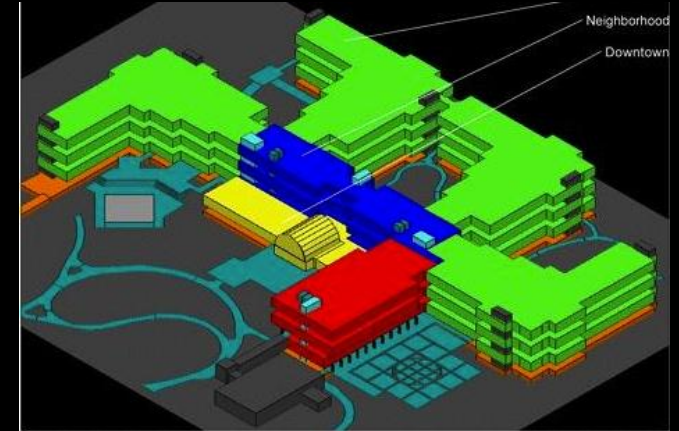
Kings County Hospital Center  
Basic Hospital Organization  
3 Centers of Excellence "C-A-K"



Case Study: Kings County Medical Center



# Mixing the Unmixable: The Why's and How's of Co-location



Case Study: Rochester Psychiatric Center



# Mixing the Unmixable: **The Why's and How's of Co-location**



**Case Study:** West 5<sup>th</sup> Street Campus, Hamilton, Ontario



# Mixing the Unmixable: **The Why's and How's of Co-location**



**Case Study:** Worcester Recovery Center and Hospital



**Q&A**

# Planning and Organizing a CPEP: **Kings County Hospital**

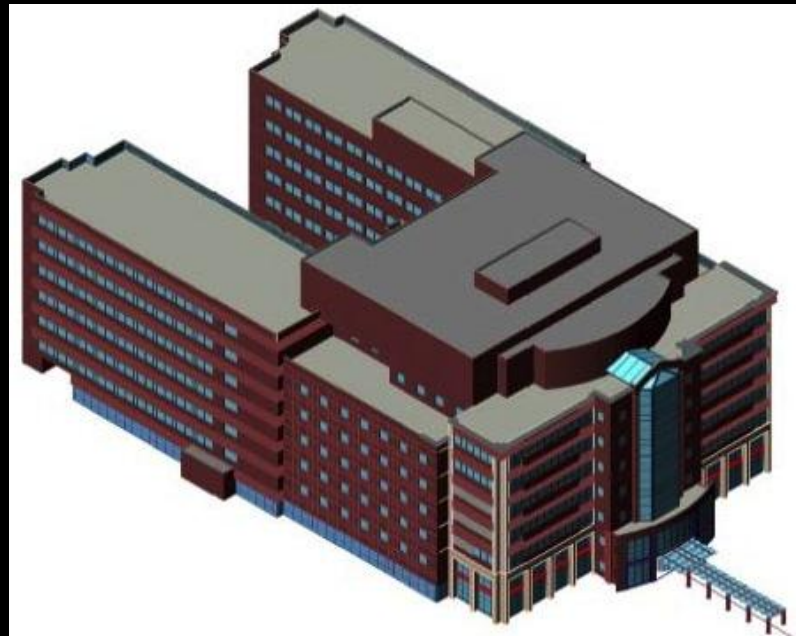
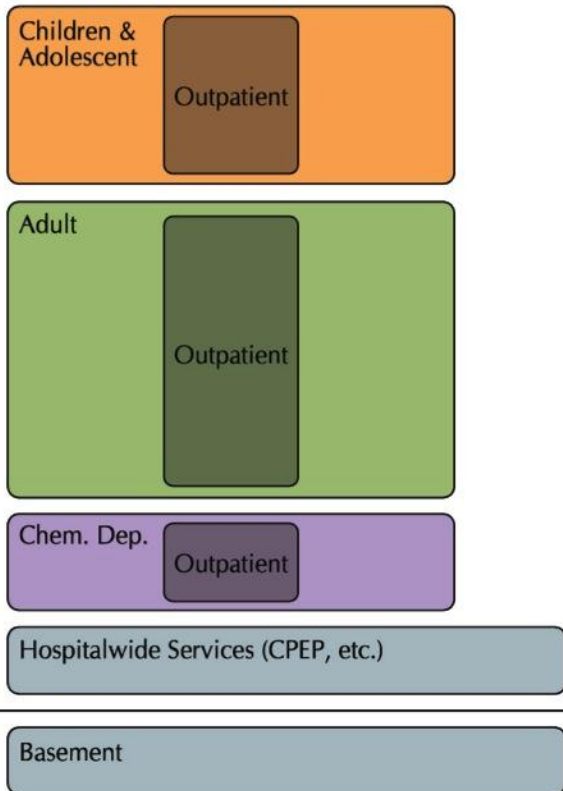


## Description:

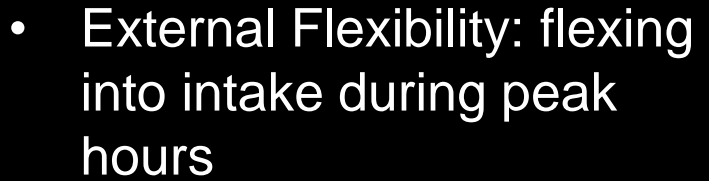
- 180 new psychiatric beds
- Includes CPEP, outpatient services, ambulatory clinics, children's psychiatric services, research facilities, clinical and nursing administration, medical library, auditorium, power plant, and parking garage

Project Cost: \$88 million

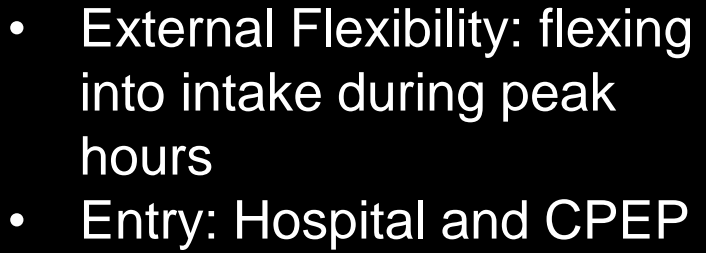
# Planning and Organizing a CPEP: **Kings County Hospital**





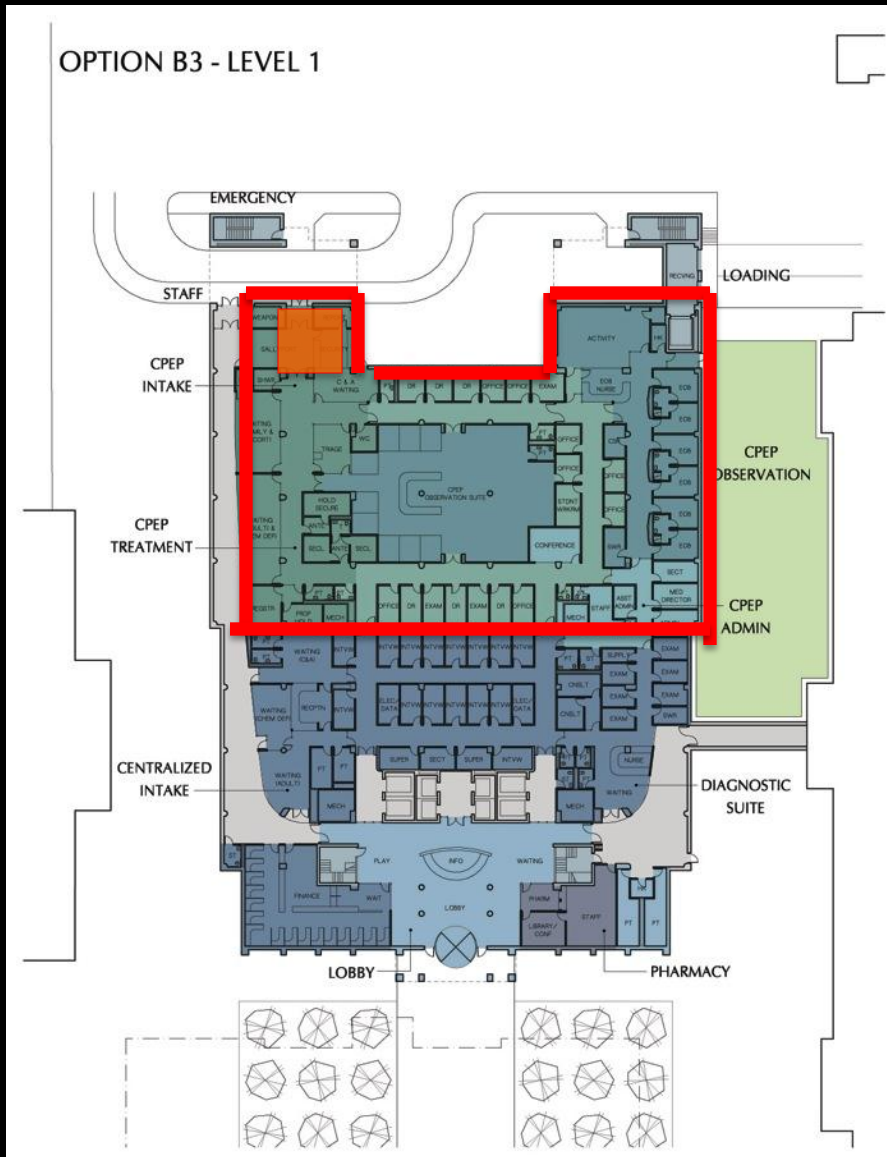


- External Flexibility: flexing into intake during peak hours



- Entry: Hospital and CPEP

# Planning and Organizing a CPEP: **Kings County Hospital**



- External Flexibility: flexing into intake during peak hours
- Entry: Hospital and CPEP
- Security and safety







- External Flexibility: flexing into intake during peak hours
- Entry: Hospital and CPEP
- Security and safety
- Secure internal vertical circulation
- Separating adults and children
- Internal flexibility
  - 1 Three changeable central zones
  - 2 Extended observation beds
  - 3 EOB day space as extended CPEP
  - 4 Waiting as extended CPEP
  - 5 Secure holding



# Planning and Organizing a CPEP: Discharge to Outpatient



Case Study: Erie County Medical Center, Buffalo, NY

**Q&A**

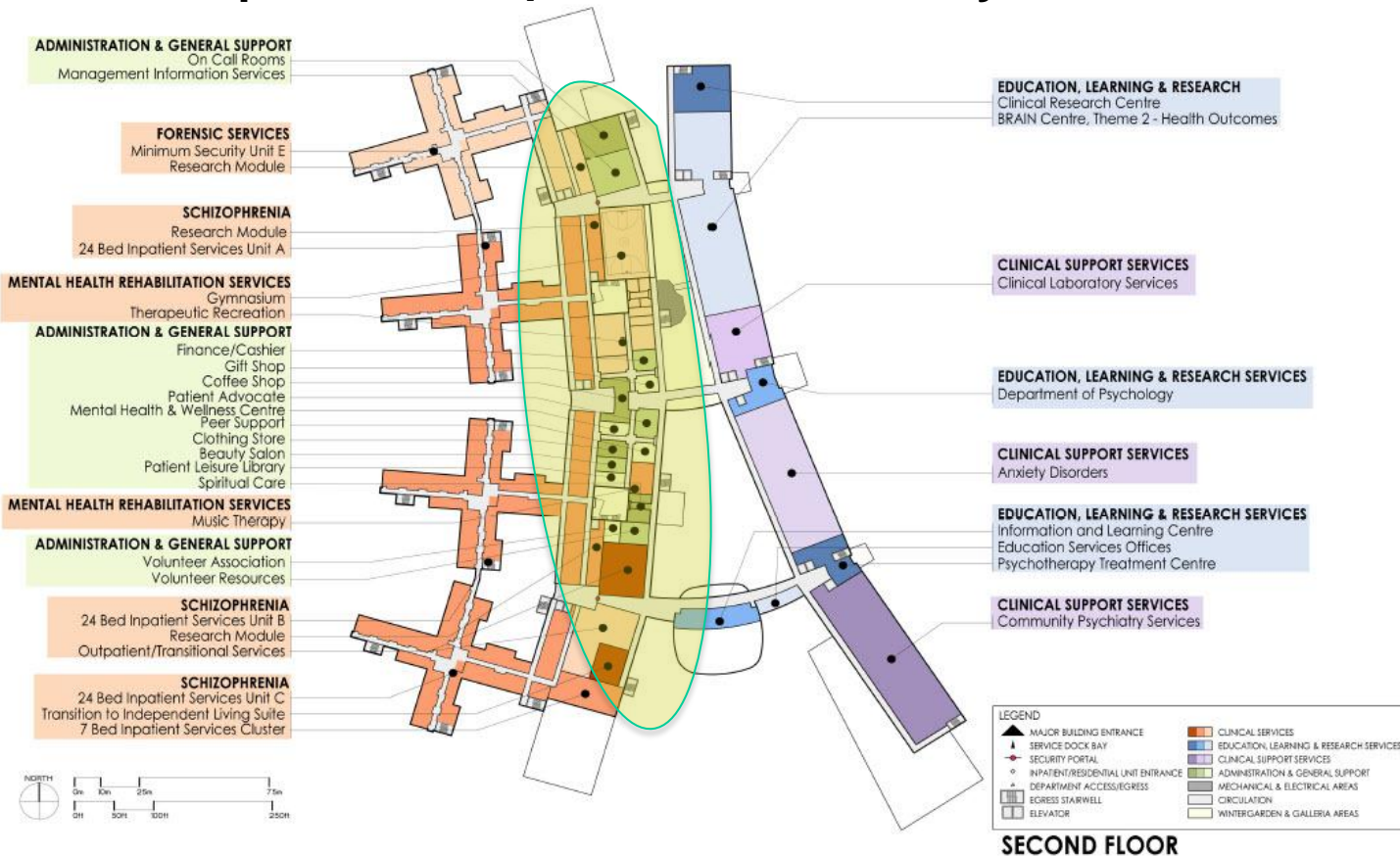
# Outpatient/Inpatient Colocation

CONCEPT: BLOCK DIAGRAMS

29

MASTERPLAN

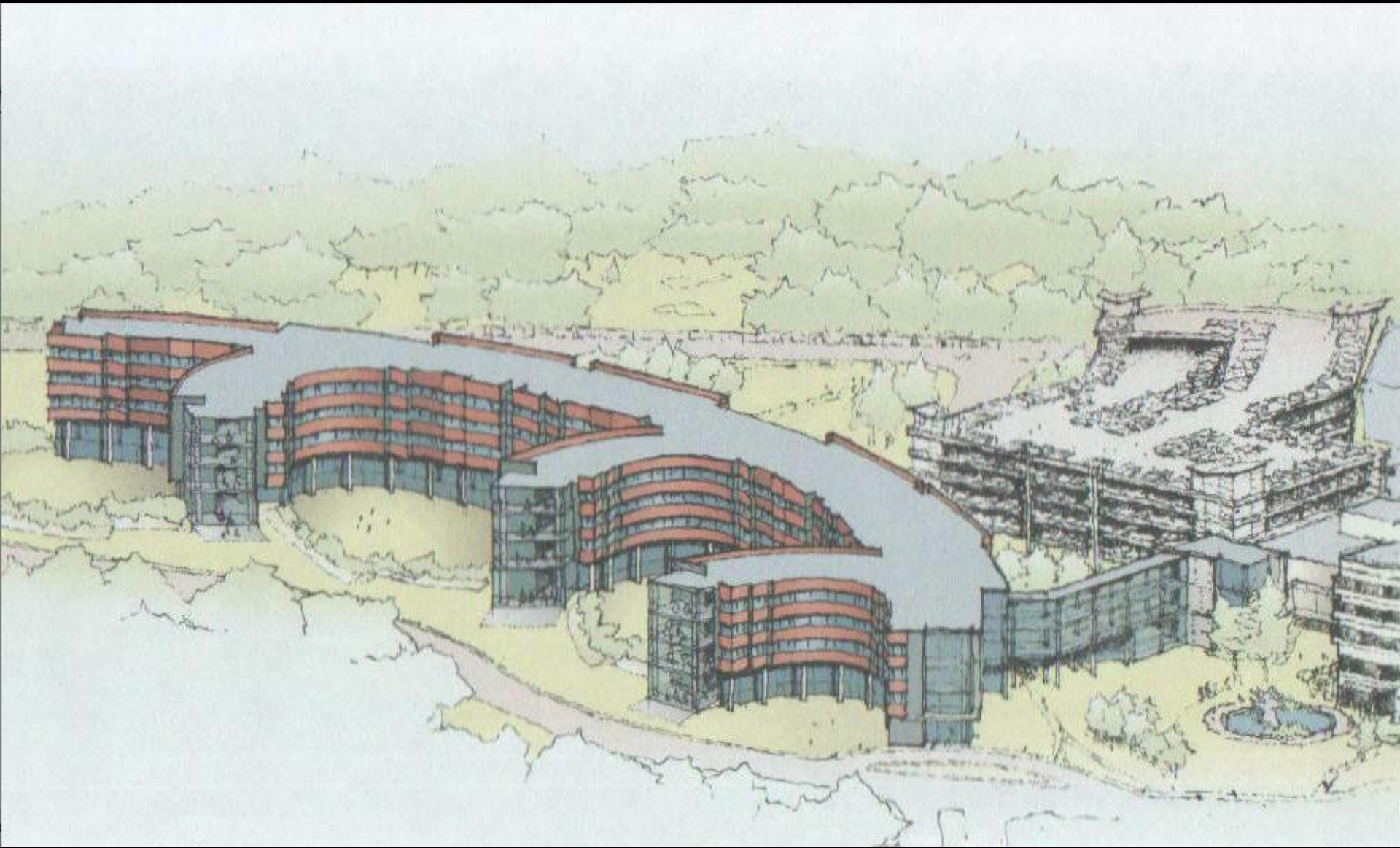
## Inpatient Outpatient Ambulatory







# Outpatient/Inpatient Colocation



Case Study: Hillside Hospital Master Plan

**Q&A**



# Webinar Survey & CE Form

This concludes the AIA Continuing Education Systems Course.

Complete the online webinar survey and CE form at:

<http://www.zoomerang.com/Survey/WEB22FHWJFF74E>

Learn about our other webinar offerings at:

<http://network.aia.org/events/webinars/>

# Important Current Issues in Mental Health Design

- Federal Funding, Parity and Health Reform
- Treatment Trends
- Patient Safety
- Co-location of Inpatient Types
- Comprehensive Psychiatric Emergency Programs (CPEP's)
- Co-location of Inpatients and Outpatients



# Mental Health Design 201

AIA Academy of Architecture for Health

June 4, 2012

Thank you!

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