

**ARCH-599**  
**Healthcare Design**  
**2 Units**  
**Fall 2018**  
**Professor Victor Regnier**  
**FAIA + ACSA Distinguished Professor**

**Class: Wednesdays 6:30-8:30 pm, (2 Units)**  
**Location: Harris 102**  
**2 Saturday Site Visits: Week 5—9/22, (9AM to 2PM), Week 10—10/27, (9AM to 2PM)**

### **Introduction**

This course focuses on the design of a diverse collection of hospital and community settings for healthcare. The course introduces students to a range of building types that vary from major trauma centers to small scale community outpatient facilities. It traces the evolution of healthcare settings from the Greek period to current times, including the newest emphasis on public health and lifestyle.

Hospital design and construction from the mid 20<sup>th</sup> century onward has been a major societal priority in the US and across the globe. It is a building type that is very challenging because it requires intelligence, experience and careful attention to detail. Healthcare design is often a forward-thinking process which seeks to anticipate changes that may likely occur in the future. It involves very sophisticated safety and technical controls while demanding flexibility based on changing needs (equipment, technology and treatments). It is also an increasingly expensive enterprise that challenges our values about equity and because architectural errors can often be costly, it values the quality of the team and their expertise in delivering the best design.

Southern California is one of the worldwide centers for the design of healthcare environments with dozens of firms competing for billions of dollars in commissions. Healthcare is a growing industry stimulated by the unprecedented expansion of the oldest-old population and the use of new diagnostic and treatment technologies. It seems everyday a new disease is being conquered with every institution striving to keep up with the newest approaches to providing cutting edge medical care.

### **Why is this topic important to Study?**

From a humanistic perspective, good health is perhaps our most cherished gift. Today we actively use research from evidence-based good practices to make the best design decisions. This research tells us the environment appears to make a difference in convalescence rates and a patient's overall satisfaction with their experience. Today's hospitals are very different from those of 50-70 years ago. The best settings today involve the patient and their family in the process of healing. Consumers are increasingly expressing their opinions through surveys and social media about the quality of care and the quality of the environment.

Today, hospitals use privacy and social support to improve patient outcomes. They involve a range of sophisticated imaging devices that improve each year and are more accurate at diagnosing medical problems. Sophisticated treatments use cyber-knife technologies and robotic surgical tools, as well as simpler, relatively straight-forward outpatient procedures. Hospitals which were best known for inpatient stays are now less necessary with the advent of expanded outpatient procedures. Having cataract surgery or a colonoscopy are commonly carried out without the need of an overnight stay. Hospital design today is a group process that involves a range of inputs from operational, financial, managerial and technological sources. The safety and effectiveness of the setting also requires the input of doctors, nurses, staff, patients, visitors and family members.

### **Course Topics and Approach**

This topic of healthcare design is huge in scale and magnitude. In fact, many firms who specialize in this area, have their own in-house training programs. This course is meant to provide an overview of this changing building type and how it impacts the practice of medicine (and architecture) today.

The course starts with the history of the hospital as a building type from 500BC to the present day summarizing with a list of today's challenges and tomorrow's future trends. It describes powerful research findings that show how landscape designs can combat depression and promote relaxation. Building organizational strategies and

programming approaches are reviewed as well as factors that affect appearance and functionality. It examines the patient room and new trends that embrace old ideas and introduce new ones. It demonstrates how and why families/friends have become more active participants in the healing process. It also shows how empirical analysis (often labeled evidence-based design) is affecting practice. Finally, it ends with a look at new technologies like imaging diagnostics and operating room procedures which are changing high-tech medicine.

### **Instructor**

Victor Regnier, is a professor with a joint appointment between the schools of Architecture and Gerontology. Victor's expertise in healthcare and aging has made him an internationally recognized scholar, researcher and design consultant. His work as both an academic and consultant has bridged 35 years and includes his participation in hundreds of projects in the US, Canada, the UK and Germany.

### **Grading**

Students will be evaluated on the basis of 2 written evaluations, 2 quizzes and class participation/attendance. Final exam questions will be taken from the readings and class lectures.

1.	2 Evaluation papers (20% each)	40%
2.	Weekly readings + Participation/Attendance	15%
3.	Reading assignment discussion questions (2 discussion Q @ 5% each)	10%
4.	<u>Final Exam</u>	<u>35%</u>
	Total	100%

You are expected to read the assignments prior to class and come prepared to discuss the work and raise questions from your perspective. If you are not able to attend class, please let me know why you can't attend. You can either e-mail me at regnier@usc.edu or leave a voice mail message or text at (310) 773-1260.

My office hours are by appointment only. It is easiest to meet with me after class (Wednesday PM). My office is on the third floor of Watt Hall #348. I have a mailbox in the Watt Faculty room on the second floor and this is where you should hand in papers at the end of the semester or between class periods. Please give them to Jane Ilger or the current assistant in the main office and they will initial them, date them and place them in my box. It is also OK to email papers to me at my email address above.

### **Class Participation**

A small portion of each class will be set-aside for class discussion during which we will go over the readings and the field trips. Class discussion along with your class comments on the readings, debriefing from field trips and attendance will be used to calculate your participation grade.

### **Short Paper Assignments:**

You are expected to write a short evaluation paper on the two site visits we make. After experiencing the site visit, listening to the lectures, and reading the assigned materials; you should write a 5 page (double spaced) essay, which captures your evaluation/analysis of the setting. Photos, sketches annotated plans and diagrams that further describe the design/social context should accompany the essay **They will not be counted in the page limit.** The experience of each setting should include (although need not be limited to) the following categories:

1. **Site design + Accessibility**
2. **Landscape and garden development**
3. **Use/design of common space**
4. **Interior design/furniture treatments**
5. **Wayfinding considerations**
6. **Design of the patient room**
7. **Design of any special room/facility**
8. **General services, facilities and features**
9. **Management approaches and family/visitor considerations**

## ARCH 599 WEEKLY SCHEDULE

Week	Wednesday	Saturday
One	8/22--Orientation + Introduction	
Two	8/29--Hospitals by the Numbers	
Three	9/5--A Beginning Look at the History of Hospitals	
Four	9/12-- Hospitals up to the 20 <sup>th</sup> C	
Five	9/19--NO CLASS	9/22--Site Visit #1 Rancho Los Amigos Rehabilitation Hospital
Six	9/26--Site Issues, Outdoor Space and Gardens	
Seven	10/3--Building Organizational Strategies #1 paper DUE (Rancho Los Amigos)	
Eight	10/10--Programming and Spatial Organizational Approaches	
Nine	10/17--The Patient Room--Design Factors	
Ten	10/24--NO CLASS	10/27--Site Visit #2 (TBA)
Eleven	10/31--How to Involve Caregivers + Family--The Planetree Model	
Twelve	11/7--Evidence-Based Design and Research	
Thirteen	11/14--Special Evolving Rooms and Places #2 Paper is DUE	
Fourteen	11/21--THANKSGIVING--NO CLASS	
Fifteen	11/28--The Future: Where Are We Going? Review for the Final	
Final Exam	12/5 FINAL EXAM--7:00PM to 9:00PM	

### Attendance Policy

In this class, attendance is **very important**. Because much of the learning takes place through the tours we take of important buildings and class discussion, it is imperative that you take class attendance seriously. Having said that, I know many students have complicated schedules and weekends are often the only time available for other important events. Other assignments are available for “making up” a missed class period but this must be negotiated with the instructor.

There will be a sign-in and sign-out sheet for each class period. If you are more than 30 minutes late for class you have essentially missed the class. Students that arrive more than 15 minutes after class begins are considered tardy. Coming to class a few minutes early (if possible) is always a good idea. Conversations with the instructor and student colleagues are often very productive before class begins.

Earlier in the document, grading policies were described in detail. Class attendance along with class participation, discussion and Q+A is 15% of your grade. If you do not attend class—your participation grade will likely suffer. Students will be noticed at mid semester and/or toward the end of the semester if they have missed more than 2 classes.

For site visits you will also be required to sign the role sheet. Leaving the class before the official end of class is also not acceptable. However, if the class goes over the allotted time you certainly have permission to leave.

## Weekly Course Outline with Readings

### 8/22 Week One

#### Orientation

Introduction to class structure, expectations and grading.  
Relationship of seminar class to studio  
Hospitals—important characterizing facts

### 8/29 Week Two (48+49 pgs.)

#### Hospitals by the NUMBERS

Number and growth of hospitals in the US  
Trends in development and design  
Different types of hospitals and their purposes

#### Reading

Kobus, et.al. (2008), pgs 1-16; Verderber (2010) pp.3-7; AHA (2018) Environmental Scan, 24pp;  
AHA (2018) Hospital Statistics, 2 pp.

#### Reference and Review

Cadre (2015) Clinic 20XX: Designing for an Ever-Changing Present, 23 pp.  
AHA (2018) Community Health Indicators, 26 pp.

### 9/5 Week Three (85 +50 pgs.)

#### A Beginning look at the History of Hospitals

Greek Beginnings  
Roman Organization  
The Medieval Period  
The Renaissance  
Nightingale Era

#### Readings

Verderber (2010) pp.9-33; Verderber and Fine (2000) pp.3-13; Kisacky, J (2005) Restructuring Isolation: Hospital Architecture, Medicine, and Disease Prevention. Bulletin of the History of Medicine, 79(1), pp.1-49.

#### Reference and Review

Matheson, A. and M. Mack (1913) pp 1-50

### 9/12 Week Four (126 pgs.)

#### Hospitals through the 20<sup>th</sup> C

1900-1945—pre WW2  
1945-2000—post WW2

#### Readings

Verderber (2010) pp.34-41; Verderber and Fine (2000) pp.17-86 and 133-181.

### 9/19 Week Five

**NO CLASS—Field trip on weekend**

### 9/22 Week Five--Saturday Field trip (Rancho Los Amigos) —Smith Group

**10AM-3:00 PM Rancho Los Amigos Rehabilitation Hospital**

**Host: Chai Jayachandran, JJR Smith Group**

**Host: TBA, Rancho Los Amigos**

**Rancho Los Amigos**

<https://dhs.lacounty.gov/wps/portal/dhs/rancho>  
(See **Rancho Rising 2020**)  
<https://dhs.lacounty.gov/wps/portal/dhs/services/rehabilitation/>

**9/26 Week Six** (84 pgs.)

**Site Issues, Outdoor Space and Gardens**

Site Considerations

The Power of the Natural Environment

**Readings**

Verderber (2010) pp.45-63; Marcus and Sachs (2014) pp 14-32; 36-46: 56-90;  
Ulrich (1984) pp 420-421.

**10/3 Week Seven** (125 + 48 pgs.)

**Building Organizational Strategies**

Hospital Building Components

Circulation Considerations

Wayfinding

**Required Reading**

Levin, D. (2014) pp.164-169 (Wayfinding); (Comb--St Joan de Reus), Levin (2014) pp. 42-53, Broto (2014) pp. 20-30; (Double Comb—Santa Luca University Hospital), Levin (2014), pp. 54-64; (Punched Block—REHAB Basel Centre for Spinal Cord + Brain Injuries), Verderber (2010) pp. 250-257; (Dueling Arcade—Chickasaw Nation Medical Centre), Levin (2014) pp. 236-247, Broto (2014) pp. 118-125); (Unifying Arcade—Evelina Children's Hospital), Verderber (2010) pp.242-249; (Central Atrium--Center for the Intrepid) Verderber (2010) p. 258-263; (Entry Side Open—UCLA Outpatient Surgery and Oncology Center), Roberts (2014) pp. 136-143; (Open Courtyard—Healthcare Centre for Cancer Patients), Roberts (2014) pp. 170-177, Broto (2014) pp. 8-19; (Matchbox on a Muffin—Rey Juan Carlos Hospital) Levin (2014) pp.29-39, Broto (2014) 68-79); (Parallel, Linear Corridors—Vlietland Hospital), Levin (2014) pp. 91-97, Mens and Wagneer (2010) pp. 314-315.

**Reference and Review**

(Punched Block—Kentish Town Center), Levin (2014) pp. 260-273; (Punched Block—Hospital in Villeneuve), Broto (2014) pp. 158-167; (Dueling Arcade—Methodist West Houston) Levin (2014) pp. 76-87); (Central Atrium—El Alamito Neighborhood Health Center) Broto (2014) pp. 126-137)

**10/10 Week Eight** (81 pgs.)

**Programming and Spatial Organizational Approaches**

Program Elements

Assembly Approaches

Adjacencies and Relationships

**Readings**

Miller, R; E. Swensson, and T.J Robinson (2012) pp.250-291 (Outpatient Clinics); Kobus et. al, 17-38 (ancillary departments); 122-128 (rehabilitation); 142-146 ((CSP-Central Sterilizing Processes); 157-162 (Support Services).

**Evaluation Paper #1 DUE—10/3**

**10/17 Week Nine** (40 pgs.)

**The Patient Room**

The single-bed Room

Innovations and Concerns

**Readings**

Verderber (2010) pp.65-77; Verderber and Fine (2000) pp.195-221.

**10/24 Week Ten--NO CLASS**

**10/27 Week Ten—Saturday field trip**

**Larger Hospital TBA**

**Host: TBA**

**10AM- 3PM**

**10/31 Week Eleven (60 pgs.)**

**Involving Caregivers and Family—The Planetree model**

The Planetree Approach

Patients, Family, Visitors and Staff

**Readings**

Brawley (2006) pp.149-160; Verderber (2010) pp.78; Scott and Kaiser (2009) pp.31-76; Reiss, (2017), Ten Hospital CEOs Predict A Brave New World of Patient Engagement Forbes Magazine, February, 27.

**Reference and Review**

<https://planetree.org/>

**11/7 Week Twelve (65 + 14 pgs.)**

**Evidence-based Design and Research**

Optimizing success in the future

Using data and group process to make better decisions

**Readings**

Ulrich, R., C. Zimring, X.Zhu, J. DuBose, H. Seo, Y.Choi, X. Quan, and A. Joseph (2008), A Review of the Research Literature on Evidence-Based Healthcare Design, 1(3) HERD, pp.61-125.

**Reference and Review**

Cama, R. (2009) Evidence-Based Healthcare Design, Hoboken: Wiley + Sons, pp.3-16.

**11/14 Week Thirteen (75 pgs.)**

**Special and Evolving Rooms and Places**

The Emergency Room +

The Surgical Suite +

Imagery Suite

**Readings**

Miller, R; E. Swennsson, and T.J Robinson (2012) pp.116-141 (Emergency Unit); and pp.142-169 (Diagnostics) pp.170-191 (Surgery Facilities).

**Evaluation Paper #2 Due**

**11/21 Week Fourteen—NO CLASS—Thanksgiving**

**11/28 Week Fifteen (35 pgs.)**

**The Future: Where are we going**

Prognostications

Review + Preparation for the Final Exam

**Readings**

Verderber (2003) pp. 281-302

Verderber (2010) pp. 101-113

**12/5 FINAL EXAM, Harris 102 (7:00-9:00 PM)**

## Bibliography

(\*Books are cited in the reading list above)

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- \*American Hospital Association (AHA) (2018), **AHA Community Health Indicators: Chapter 7**, Washington DC: AHA
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- \*Brawley, E.C. (2006) **Design Innovations for Aging and Alzheimer's**, New York: Wiley.
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- Center for Healthcare Design, (2014) **An Introduction to Evidence Based Design: Exploring Healthcare and Design**. Concord, CA: Center for Health Design.
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- Frumkin, Howard. **Environmental Health from Global to Local**. Hoboken, NJ: John Wiley & Sons, 2016.
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- Gordon, S and P. Mendenhall, (2012) **Beyond the Checklist: What Else Health Care Can Learn from Aviation Teamwork and Safety**, Ithaca: ILR Press (Cornell)
- Guenther, R and Gail Vittorri (2013) **Sustainable Healthcare Architecture**, Second Edition, Hoboken: Wiley and Sons.
- Jackson, Richard, and Stacy Sinclair. (2012) **Designing Healthy Communities**. San Francisco: Jossey-Bass.
- \*Kisacky, J (2005) Restructuring Isolation: Hospital Architecture, Medicine, and Disease Prevention. **Bulletin of the History of Medicine**, 79(1) pp.1-49
- Kobus, Richard, and S. Kliment. (2008) **Building Type Basics for Healthcare Facilities**. Hoboken, NJ: Wiley and Sons.
- Leibrock, C. and D. Harris (2011) **Design Details for Health: Making the Most of Design's Healing Potential**, Second Edition, Hoboken: Wiley and Sons.
- \*Levin, Deborah (ed), (2014) **General Hospitals: Planning and Design**, Hong Kong, Design Media Publishing
- Lopez, Russ. **The Built Environment and Public Health**. San Francisco, CA: Jossey-Bass, a Wiley Imprint, 2012.
- Malkin, J. (1992) **Hospital Interior Architecture**, Hoboken: Wiley and Sons.
- Malkin, J. (2014) **Medical and Dental Space Planning: A Comprehensive Guide to Design, Equipment and Clinical Procedures**, Hoboken: Wiley and Sons
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- \*Marcus, C. and N. Sachs (2014) **Therapeutic Landscapes: An Evidence -based Approach to Designing Healing Gardens and Restorative Outdoor Spaces**, Hoboken: Wiley and Sons.
- \*Matheson, A. and M. Mack (1913), **Florence Nightingale: A Biography**, London: Thomas Nelson and Sons.
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- \*Reiss, (2017), “Ten Hospital CEOs Predict A Brave New World of Patient Engagement”, **Forbes Magazine**, February, 27.
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- Verderber, S. (2012) **Sprawling Cities and Our Endangered Public Health**, New York: Routledge.
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Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Part B, Section 11, “Behavior Violating University Standards” [policy.usc.edu/scampus-part-b](http://policy.usc.edu/scampus-part-b). Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct>.

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*National Suicide Prevention Lifeline* – 1 (800) 273-8255

Provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week. [www.suicidepreventionlifeline.org](http://www.suicidepreventionlifeline.org)

*Relationship and Sexual Violence Prevention Services (RSVP)* – (213) 740-4900 – 24/7 on call

Free and confidential therapy services, workshops, and training for situations related to gender-based harm. [engemannshc.usc.edu/rsvp](http://engemannshc.usc.edu/rsvp)

*Sexual Assault Resource Center*

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