

# *Leading By Design A Case Study*

*Presented at the  
2007 Healthcare Facilities Symposium*

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President*

AESTHETICS INC



## *Introduction*

This paper will describe my experiences and learnings that represent the first three years of my involvement with Leading By Design, a project of Caritas. I have to say that sharing this information is a pretty humbling thing to do. When I originally signed up for this project, I did not commit to ever going public with it. But over time, as both the process and the understanding of the work became more clear, I changed my mind.

## *Presentation Outline*

- My Background (why I chose to be a case study)
- Summary of My Career (what led to my participation in Leading by Design – LBD)
- The First Three Years
- My Working Hypothesis on Creating Generative Space

I hope that by hearing of the evolution of my journey, what led to my participation in Leading by Design, what I hoped to work on — and how my practice has become a Research Project in Creating Generative Space — you will come away with some value and perhaps some ideas you can apply to either your practice or your personal life. I truly believe that I live and function in a much larger design community, definitely national in size, with relationships internationally. As a community, we move this work ahead together. So welcome to my journey.

## *My Background*

I have had many passions over the years. Art, sculpture, design, the study of religions and spirituality are just a few. Life handed me many opportunities and I opened a 10,000 sq. ft. regional arts gallery in La Jolla, California in 1975. While owning the gallery, I was given a contract to design an arts program for a new healthcare clinic opening in San Diego. That was my entry to healthcare. Not knowing any better, I commissioned all original artwork for the facility.



This was one of those pivotal opportunities that come to us in life. I could just as easily have said “No, I do not know how to do this.” But I had youth and a nature not to turn down challenges, which nudged me to accept this unusual project.

This was such a rewarding and life changing experience for me, I changed professions and decided to dedicate myself to providing art for healthcare institutions. In 1980, I closed my gallery and founded Aesthetics to supply art programs for healthcare environments. In the early 1980s I met up with other arts administrators working in hospitals around the country and was one of the founding members for the Society for the Arts in Healthcare.

In the late 1980s, I received an invitation from Wayne Ruga to attend the First Symposium on Healthcare Design at La Costa, California. This was an eye opening experience. It was the first forum of architects, interior designers, allied professionals, and manufacturers to discuss what was wrong with healthcare design. Finally I was engaged in a community that was speaking about putting patients first. We were still living in a culture where “doctor knew best” and the voice of the patient was a silent cry.

I remember the impact of that first conference. It was incredibly rewarding and fulfilling to dialogue with colleagues on issues that had plagued me with no answers.

*The purpose of the Symposium  
is to change the world.*

We have gathered together with high hopes, courageous aspirations and an intention to improve the status quo.

*Wayne Ruga*

This fueled the '60s hippie within me.

I made a commitment to be involved and to learn and to volunteer. This began a journey of commitment to continuous learning, excellence and innovation in my professional career and to share my work through involvement in professional organizations, writing and lecturing about the work. I became involved and committed to the Symposium on Healthcare Design (now the Healthcare Facilities Symposium), the Center for Health Design, and the Society for the Arts in Healthcare. The following lists a few of my Engagements through Volunteerism:

- 1st Symposium on Healthcare Design
- Advisory Council
- Council of Sponsoring Organizations
- Presenter at the Conferences
- Local Host 2003
- Sponsor of Research
- Leader of Demonstration Projects
  - a. The Shoebox Adventure and UCSD Meditation Room
- President's Award Winner 1995 for Outstanding Service
- Society for the Arts in Healthcare
- President, 1996-1997
- Janice Palmer Award for Leadership
- Mentor for SAH Consultancy Program

From the beginning, Wayne was a mentor to me. He inspired me through his thought and action and he was continuously there to reinforce the commitment that I made to the work. When he decided to change tracks and form Caritas, I committed to journey with him, first in a supportive role and later with the advent of Leading By Design as a research project. Through the years, a deep friendship grew. It was my great honor to be the presenter of his Lifetime Achievement Award in 2006.





# Aesthetics, Inc. – Today

Over the years Aesthetics has grown. Today, 28 years later, we are a 35-person interdisciplinary healthcare design group with specialties in systems and strategies for interior architectural design, wayfinding programs, arts and music programs, and donor recognition programs. Through a collaborative process we strive to bring harmony, balance and beauty to the built environment. We have clients throughout the United States and Canada.

## Wayfinding Programs

One of the disciplines we work in is wayfinding for large health care organizations. We are called on to provide exterior and interior signage. People are generally stuck on the individual problems – parking is a big problem. We begin by delivering a patient experience assessment that maps the patient’s journey. We look at both current state and ideal state and develop a system of giving directions that influences the physical environment, the cultural environment and the operational environment. We look at wayfinding as a customer satisfaction and a performance improvement tool. These are large multiple-year engagements that assist the organizations in looking holistically at all elements that influence the patient journey. It is always surprising to our clients how in depth this work is.

### Maps and Directories



Graphics



Icons

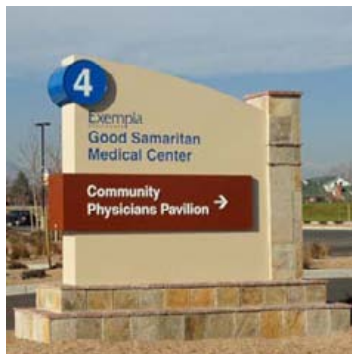




Interior Signage



Exterior Signage



Internet/Intranet



Employee Training





## *Parking*



## *Interior Architectural Design*

We have a full interior design department that works closely with our art and graphic departments to ensure that all environments have integrated arts programs that reflect the uniqueness of the organization. In all of our work we ask not only how we can improve the function and the beauty of the space, but how does the environment support the patient population and what the patients are clinically experiencing. We do this through utilizing patient-focused principles.



*Destination Treatments*



*Color, Finishes and Lighting*



*Flooring Treatments*



*Chapels and Interior Spaces*





## History and Culture Programs

We start each project with a visioning session that reviews the organizational mission, vision and values. We often create displays that assist organizations in telling the stories of how the employees of the organization have lived the values. This is done for the employees and the visitors.



## Healing Gardens

We work as arts and design consultants and collaborate with landscape designers to co-design healing gardens. These provide spaces for respite for patients, families and staff and in many cases start telling the stories of healing. Since healing is a journey, a trip through the garden can be very metaphoric.

## Healing Gardens



## Regional Arts Programs

Our signature arts programs are modeled after regional public arts programs in which we manage community RFPs for the hospitals to find the best artistic talent in the community and showcase them in the facility. Something magical happens when a community gets excited about working with community artists. This works only when the organization is very specific in defining the way in which the arts can assist. We engage both the arts community, the design team and the clinical team to define this together.



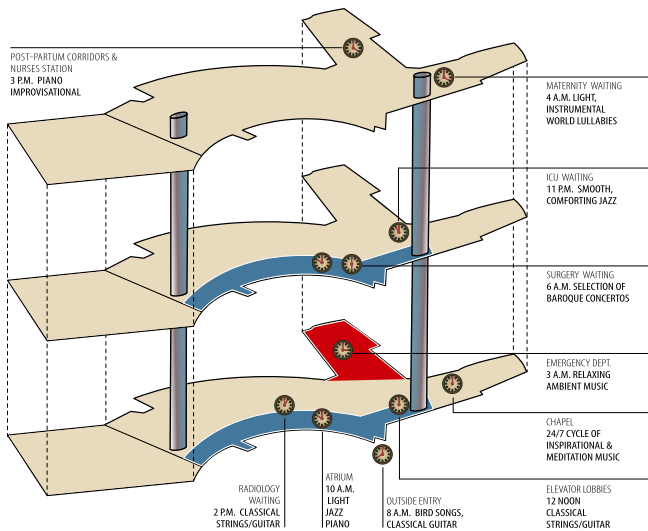




*Arts Programs and Landmark Art*

## *Prescriptive Music Programs*

A few years ago we started a new offshoot of Aesthetics called Aesthetic Audio Systems to bring custom-designed, evidence-based music and sound programs into healthcare environments. This has been a dream of mine for over a decade. After two years of music development and research and development, we are installing systems nationwide. We have two product/service areas: Harmonic Healthcare provides custom-designed ambient music for public spaces, while MusiCure and MuViCure, which were developed in Denmark, bring therapeutic music and video to patients at bedside and during treatment.



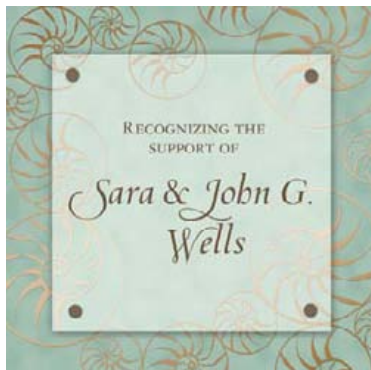
*Harmonic Healthcare® Sound and Music*





## *Donor Recognition Systems*

Donor recognition was an early practice discipline for Aesthetics. Today we have a full department of designers and advisors who assist healthcare organizations in writing donor policy and procedure and designing long-term master plans for their healthcare systems. We are very conscious in the design of each system to honor the community and its history.

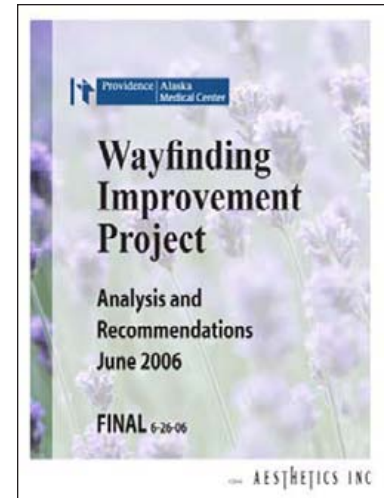


## *Patient Experience Assessments*

Over the years we have learned to combine our various disciplines into a multidisciplinary process that we now call the Patient Experience Assessment. This is a week-long deep dive into analysis of:

- The Physical Environment – its clues and congruencies;
- The Operational Environment – its policies and congruencies;
- Procurement and Maintenance Management Systems.

In the process we search for what it takes to create exceptional customer experiences and the means to sustain it.



## *The CARITAS Project*

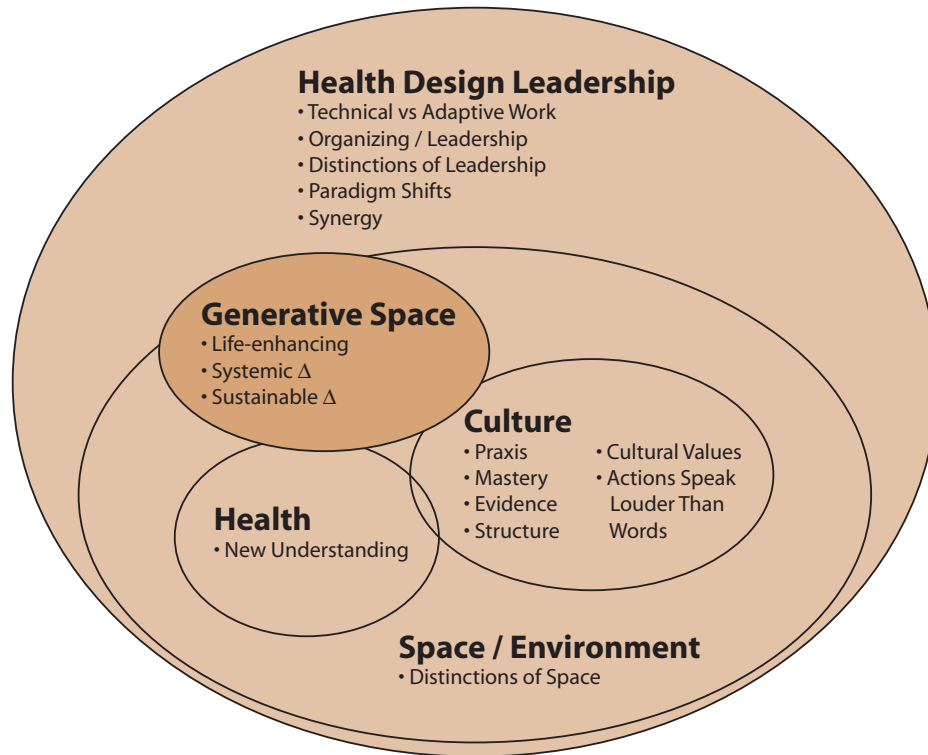
The first project of Caritas was the Leadership Summit in Northern California. This was an invitational experience to spend a multi-day retreat with some international healthcare leaders to look at healthcare design and its challenges in an “outside the box” way. Being at the Esalen Institute, it promised to offer a new type of think tank, so I went. I began to address some core issues I was troubled with:

- Why is healthcare design not sustainable?
- What do we mean by a healing environment?
- How can we create working practices across disciplines that demonstrate respect for human dignity?
- How can we develop methods so the processes of design and construction are more collaborative and not combative?

The next large gathering of Caritas was another expanding journey. This was the Praxis Conference in Manchester, England. It was an international assembly of public, private and industry leaders creating experiential learning models based on their personal work and experiences. Wayne asked me to present a talk about my practice as a journey and look at it from a “lessons learned” point of view. The process of writing this piece and delivering it publicly was rewarding enough to have me agree to join Leading by Design and agree that my life and practice would be a research project and a case study on how to create generative space.

# Leading by Design

In joining Leading by Design, I embarked on a multi-year analysis of how to create Generative Space through developing leadership, and working in the areas of Health, Culture, Space and Environment. There are five areas of health design leadership and 22 principles that we learn to apply in this work.



When I began Leading By Design I asked myself the following questions:

- How do I create congruency between my personal life, my family and community life and my professional life?
- How do I make Aesthetics, Inc. sustainable?
- How do I translate Generative Space, Generative Design into my practice?
- How can I translate that learning to my clients?

The process involves monthly assignments and meetings that analyze all goals and development at Aesthetics and my work with my clients as action research. We continuously looked at what were the lessons that came from the various situations I encountered and what actions were necessary to implement change that responded to these lessons.

After working on Leading by Design for a year, I attended a Learning Collaborative at Harvard University in 2006. We all delivered papers that documented the improvement in our personal and professional lives based on the work of Leading by Design. We identified how to document



improvement of health and healthcare delivery in the communities we serve through the influence of this work.

Over the years I have had numerous opportunities to demonstrate my leadership in the field of healthcare design, at national and international conferences and gatherings. I have presented papers in England, Sweden, Japan, Canada, and Austria. In the Spring of 2007 the ***People to People Architectural Exchange to China*** took place. We participated in a professional and cultural exchange with healthcare professionals from China to broaden their and our understanding of how healthcare design ideas and practice can improve health and quality of life.

This was an opportunity for me to present how the arts – through demonstration of quality, replicable and measurable projects – improve the quality of the healthcare experience. In China we had the opportunity to spend time, listening, observing and sharing ideas. We looked at cultural differences and the important component that culture makes on how design is understood.

At the ***EDRA (Environmental Design Research Association) Conference*** in Sacramento, California in Fall of 2007, Wayne and I had our first opportunity to jointly present our work as case studies of Leading By Design. I believe that, in preparing for that presentation, the work of the past few years became clear. The vision and goals of creating Generative Space through the process of Leading By Design was the goal of my work. How I was engaging in the process was my research project. My hypothesis became: Can my interdisciplinary design and consulting practice (Aesthetics) assist our clients in creating replicable and sustainable generative space using Leading by Design principles?

This June we had a two-day company retreat to discuss the future of Aesthetics. What is unique about what we are doing? How do we add value to our own lives and to our clients and the patients themselves? As a group we talked about Generative Space and redrafted the following definition. As a work in progress, this is what we are working with.

### ***The Concept of Generative Space***

Generative space is defined not just by its beauty, its functionality, or even its healing properties. It is physical space with social meaning, created in conjunction with a community and cherished because it meets the community's needs, expresses its aspirations, and inspires the community to sustain and improve the space over time. Creation of the space gives the participants a sense of "ownership" of it, while reinforcing awareness that they are part of a larger, integrated community responsible for the quality and enduring efficacy of what they helped create.

### ***What about Generative Space attracted me?***

1. My practice is about creating environments that bring beauty and harmony, and inspire the human spirit.
2. We do that through gaining a deep understanding of the client and expressing their uniqueness in the environment.
3. That is a generative process – but it is currently not sustainable. How do we fill the gap?

## *Year One*

As we started year one, this was the question I posed:

How do I grow my company in a sustainable way that reinforces the company's guiding principles, produces more profit and makes our work more available to the healthcare community?

I started to look at the difference between organizations that were productive and those that were sustainable. I honestly did not know how I could create both. I began to understand that sustainability only occurs when you bring along leaders who have similar philosophies, you train them and provide them with resources. You design systems to empower people. This requires balancing any feelings of vulnerability with the enormous value you get when you grow people and give away power responsibly.

We started out by doing a reality audit. I prepared an all employee questionnaire and asked the question: How are the company's actions and values congruent with each other and congruent with your professional and personal aspirations?

I honestly expected all very positive remarks. After all, we were a very cool company doing great work in a great atmosphere. I was not prepared for the mixed reactions and the candor of them. This was one of the first issues we worked with in LBD.

Through discussion with Wayne I decided to turn over the resolution of many of the issues to a Task Force led by one of the directors who was most vocal about the incongruence at Aesthetics. I empowered him to set up a committee, use resources as he saw fit and work on solutions that would enable Aesthetics to "walk the talk."

This was a real turning point for Aesthetics. This director took the work on with a serious commitment. He brought together a team that made some wonderful changes that were very effective. Specifically, the results were:

- Doubled income in 3 years
- Staff increased from 18 to 35
- Increase in staff bonuses
- Significant increase in staff salaries
- Attracted a higher level of employees; No employees left for competitive companies

These are some of the Task Force identified changes:

- Biweekly massage for all employees
- Monthly community lunches designed by employees, paid for by Aesthetics
- New employee buddy system
- Bake-offs and Cook-offs
- Bi-annual parties designed by employees

- Healthy snacks supplied by the company
- Alternative medicine insurance
- Part time employment for all parents requesting it
- Financial support for day care for parents
- Annual employee professional goal setting with midyear review
- Career planning with appropriate training programs
- Extended time off for employees needing to go on personal retreats or family leave
- Community volunteer and charity support
- Job mentoring program for a community teenager
- Lunch time presentations of the different departments to each other
- More interdisciplinary sharing of projects
- Employee brag wall of new projects
- Values wall demonstrating how employees live the values of the organization
- Annual company goal setting with Directors

## *Year Two*

In Year Two we decided it was time to systemically apply these principles to my consulting practice. I started out by asking the following questions:

### ***Developing a Practice of Design Leadership***

- What does it look like?
- How do you practice?
- How do you know when you are doing it?
- How do you know that it adds value?
- How do you introduce the concepts of generative design and generative space?
- How do you measure it?
- How do you know it is sustainable?

I started to apply these principles to four projects that I was working on concurrently.

### ***Healthcare Visioning and Partnering***

AtlantiCare Regional Medical Center, City Division Atlantic City, New Jersey  
Arts and Wayfinding Master Plan

Rady Children's Hospital, San Diego, California  
Acute Care Pavilion Interior Design, Wayfinding and Arts Program

Providence Alaska Medical Center, Anchorage, Alaska  
Wayfinding and Patient Experience Master Plan



Loma Linda University Medical Center, Loma Linda, California  
Interior Design and Wayfinding Master Plan

MultiCare Health System, Tacoma, Washington  
Wayfinding and Patient Experience Master Plan

Common threads of all of these projects were:

- Each of the clients was engaged in levels of organizational change along with facility expansions.
- Evidence-Based Design was an important component for each client.
- Each of the clients was willing to do a deep dive beyond form follows function to look at how form follows feelings as well.

## *AtlantiCare Regional Medical Center, City Division Atlantic City, New Jersey*

Atlanticare Regional Medical Center was planning a large expansion to their downtown Atlantic City Campus. The hospital has been a part of the Atlantic City fabric for nearly a hundred years. The existing campus, which is located in the Casino District, was very tired and in need of upgrade. This expansion represented to the organization the opportunity to show a new, technologically sophisticated medical center that reflected the best of patient-centered design and care demonstrated through current evidence. We joined the project at the beginning. We were asked by the owner to bring our knowledge of evidence and our holistic philosophy to the planning of the project, and provide oversight to the client.

In order to get the full team of designers, administrators, clinical and support personnel to be “on the same page,” we started our engagement with the design and facilitation of a visioning session. We invited each of the teams to present how they were going to bring best practice information to the project. During the day we heard from Administrative, Clinical, Architectural and Engineering, Interior Design, Wayfinding and Art Consulting teams. Each team shared its vision and goals. Here are examples of a few:

### ***Administrative Goals***

- Incorporate evidence-based design concepts
- Improve financial performance indicators
- Improve our patient satisfaction scores
- Maintain patient involvement
- Improve patient safety communication and wellness
- Celebrate the diversity – are we attracting more patients?
- Become the hospital of choice for physicians, staff and customers (could be measured)
- Be a fully digital hospital
- Provide a WOW experience

### ***Clinical Goals***

- Have regard for safety
- Include technology and best communications methods
- Consider the therapeutic environment, lighting, ergonomics
- Incorporate family space and a resource center
- Provide healthy work environments
- Provide enough storage

At the end of the day we created a Partnership Agreement to honor guiding principles and to set up communication guidelines that would formalize the promise to listen to and respect all members of the team.

The new facility opened on October 11, 2007. These goals were tools used by all during the design and construction process. Many times they were referred to during the decision making process. We are currently engaged in an internal and external communications strategy to communicate the building philosophy and we have plans for post occupancy evaluation and ongoing employee training. During this project we asked ourselves several times, how can we communicate the philosophy and principles utilized in the building design so that it will be sustainable over time?

### ***Special Features of the Building***

- 500-piece Community Arts Program featuring all original art by community artists
- Wayfinding Program set the structure for the themes and colors of the buildings Harmony, Heritage, Wellness, Friendship... Community
- Custom-designed ambient Healing Music Program throughout the campus
- A 400-foot display of organizational values

The building became known as the Harmony Pavilion; that was incorporated throughout all of the internal and external communication. At the opening they even had ice sculptures carved in the shape of the icon we had created.



*Atrium in the Harmony Pavilion; Harmony Pavilion*



Wayfinding  
Maps and  
Directional Signs



Wayfinding Icons



Renderings courtesy of Francis Cauffman Foley Hoffman





**Featured New Jersey and Philadelphia Artists**

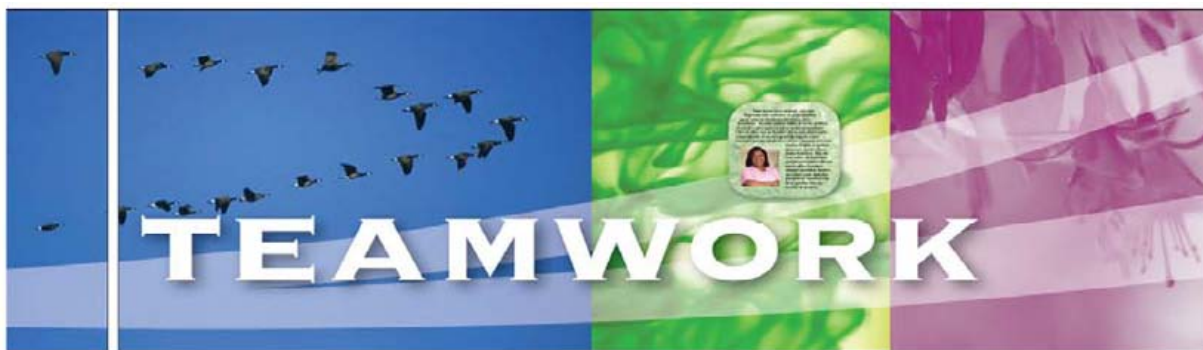
**The Healing Arts at AtlantiCare**

**ART TOUR**  
Atlantic City Campus

*(Note: The brochure contains a list of artists and details about the art tour program.)*

Regional Art Program;  
Art Tour brochure

Values Wall on the Bridge



# *Rady Children's Hospital San Diego, California*

Aesthetics was hired to provide interior design, art consulting and wayfinding consulting services for their new Acute Care Pavilion. We facilitated a similar process at Rady Children's Hospital. In 2005 Aesthetics convened a Visioning Session to develop strategic goals for the new Acute Care Pavilion. Representatives from the A/E design firms, senior leadership, marketing, foundation and facilities were assembled.

## ***Sample Goals***

- Improved Health Outcomes for Patients
  - Reduced infections, anxiety and length of stay
- Fewer Medical Errors
  - Reduced noise, reduced staff fatigue
- Improved Patient/Family Satisfaction Scores
- Reduced Cost of Care
  - Fewer falls, infections, antidepressant medications
- Increased Fundraising
  - Reinforces the uniqueness of the Children's brand/identity
  - Improves Children's market share through differentiation from other

Ground breaking was held on December 5, 2007 with completion expected in late 2010.

## ***Special Features***

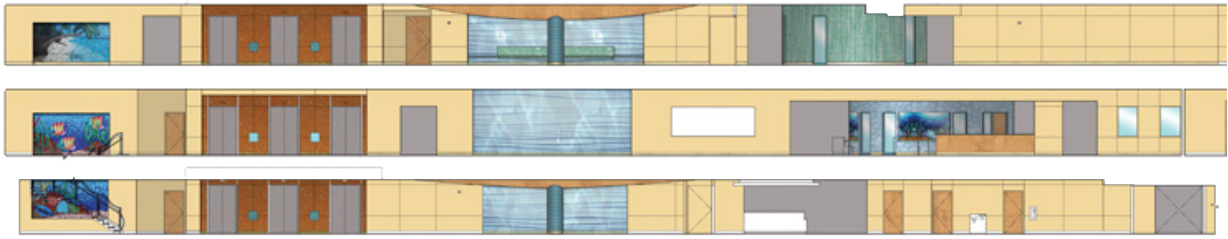
- Extensive healing gardens throughout the project raised funds from the community
- Art totally integrated into architecture with a major community arts program

There has been a very extensive value engineering process for the project and the guiding principles have assisted in making the decisions that maintain the philosophy and purpose of the project. Over the next two years we will be working with the teams to preserve and protect the integrity of this project so that it will open and be maintained in a sustainable manner.



*Main  
Entry  
Court*





*Interior design is based on a system of neighborhood themes for each level: Space, Sky, Beach and Sea.*

*Floor graphics for the Space, Sky, Beach and Sea Levels.*



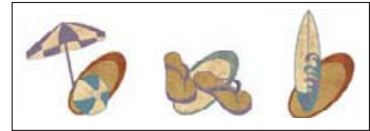
**SPACE LEVEL**



**SKY LEVEL**



**BEACH LEVEL**



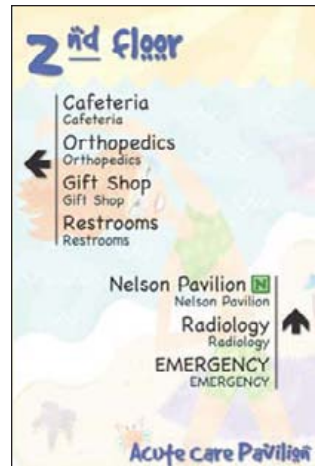
**SEA LEVEL**



*Illustrations, from top: Elevation shows three of the five levels, with a water feature that flows from the top floor to the bottom. NICU Nurses' Station on the "Space Level." Surgery waiting area on the "Sea Level." Patient room on the "Beach Level." Patient corridor on the "Sky Level."*







*Wayfinding Directional Signs at Rady Children's Hospital*

## *Loma Linda University Medical Center Loma Linda, California*

After many years of not being able to put money or attention into the physical environment, in 2006, Loma Linda University Medical Center (LLUMC) embarked on a Campus Master Plan. A team was hired to look holistically at the campus, including the development of wayfinding and interior design master plans. The wayfinding program was seen as a tool to reinforce institutional branding, improve customer service and the hospitality feel, and tell stories of the over 100-year-old hospital's innovations in science and caring.

900 bed, 1 million square foot LLUMC is internationally famous for its leadership in cutting edge medicine in proton therapy, cancer care and cardiology for adults and children. The strategy to utilize the combined power of wayfinding and interior design master plans will help LLUMC coordinate and tie together current remodeling projects. We anticipate an eventual arts program that incorporates over 400 pieces of art, including murals and other commissions. The process for design of a donor recognition program is in the very beginning stages.

In cooperation with Anshen + Allen, we conducted similar Visioning Sessions and an Assessment to determine the current state and to develop goals for the future state. In the master planning process, LLUMC decided to become a Pebble Project to guide and evaluate the effectiveness of their new design projects. They decided to become a Planetree affiliate. They are working on adopting Planetree principles, as well as working on organizational and operational change using both the Planetree and Six Sigma models.

We have completed the interior design master plan and the wayfinding plan and are starting to implement it in various cosmetic and full remodel projects as well as new construction.

We are at the beginning phases of working with the client to assist them in bringing the culture and the physical environment into congruency. This work will continue over many projects over the next several years.



*Rendering Courtesy of EwingCole*



## Year Three

Our work this year has been about:

- Defining Generative Space and Generative Design for our clients (talking about sustainability)
- Demonstrating the sustainability of our work through research
- Hiring a Research Assistant
- Further defining the added value of our interdisciplinary methodology and design leadership techniques

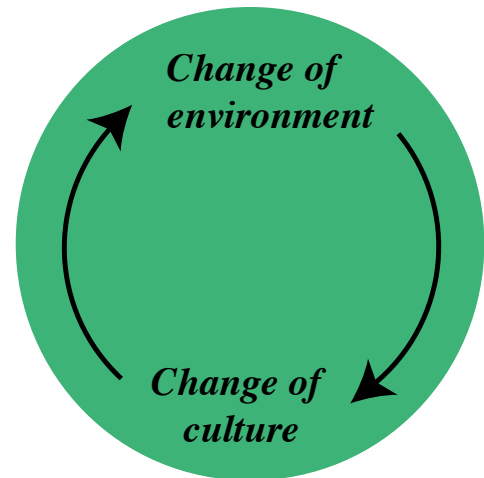
### *Recognizing the Organizational Environment*

“Our challenge is to not only design buildings based on evidence but to design the culture that will thrive instead of survive in these buildings.”

Robin Orr and Kirk Hamilton

*Improving Healthcare with Better Building*

This quote captures very well the essence of our goal in these projects: To work with the people and the places together so that the evolving culture will support the creation of healthy spaces.



*We recognize that the organizational environment is always in complete reaction to the physical environment, and that the environment is an artifact of the organizational culture.*

“A well designed physical environment can be a barrier to undesired behaviors and an enabler of desired behaviors.”

Robin Orr and Kirk Hamilton

*Improving Healthcare with Better Building*

Ideally an organization will undergo a cultural assessment simultaneously with the environmental assessment to establish current state and future goals to develop strategy for both to fill the gap.

All organizational cultures are different. Design of the culture and the physical environment must take the uniqueness into account, through a deep understanding of where the organization has been and where it wants to go.



## *Future Work*

Our future work is to apply the 10 Steps of Generative Design to our current and future work and evaluate the effects of this on the creation of Generative Space.

1. Develop Strategic Goals and a Philosophy about how the building was designed and built to improve health, wellness and the quality of healthcare delivered. Put it into a written document with photographs and illustrations – a Concordance. Get it approved by senior management. Put it on the Internet and intranet so that the concepts can be shared.
2. Ask your Architectural / Interior Design / Art / Wayfinding teams to prepare a document that talks about the sustainability of their design. Demonstrate how the design integrity can be maintained and the building improved over time. Define what is critical and what is not.
3. Extract the information from this document into a series of articles that can be translated into both internal and external articles. Broadcast this widely. Be sure to include it on your Internet and intranet sites.
4. Translate the building design features into tools to assist the employees and the organization in living the values of the organization. Link the desired outcomes to corporate values and the desired culture of the organization. (e.g., Respect – giving family and the patient more privacy during all clinical interactions)
5. Make the organizational values and the desired culture of the organization widely known through a campaign of celebrating the employees' living of the values.
6. Translate how the design features in the building contribute to the improvement of the quality of experience for employees, families and patients. For example:
  - Waiting – more comfort, more positive distractions
  - Patient Rooms – more control for the patient, better areas for families
  - Healthier work environment, better indoor air quality, less travel distances, better lighting, etc.
7. Measure the outcomes. If this is a remodel or a replacement facility, prepare baseline tests of the existing facility. Six months after the facility is open, design Post Occupancy Evaluation to look at improvements.
8. Appoint a Generative Space or Customer Experience Director. Gather a multidisciplinary group of people from the hospital. Continuously ask questions. Does this building support our strategic goals and core values? Where is it falling short? Where is it succeeding? Have this committee review all new design projects for consistency and evaluate all maintenance issues. This committee should receive the letters of satisfaction and complaints as well as review all customer satisfaction studies.

9. Senior Leadership should stay up to date on issues concerning the performance of the building and what it needs to maintain high quality performance. Senior Leadership should set goals for benchmarking the customer and employee satisfaction with the new building.
10. Design an annual event for the employees to celebrate their role in creating generative space. Tie this in to other performance drivers of excellence and quality such as reduction of medical errors, hand washing compliance, nosocomial infections, referral rates, etc.

## *Conclusion*

### *How has our practice changed?*

1. We approach this work with a deeper sense of responsibility to partner with the client and its consultants.
2. We hold ourselves to understanding the current research and adding to it.
3. There is a beginning understanding of our responsibilities to the project post installation.