RETHINKING A HEALTHCARE EXPERIENCE: THE RENOVATION OF COLUMBIA HOSPITAL'S AMBULATORY SERVICES UNIT

BY
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A Practicum
Submitted to the Faculty of Graduate Studies
In Partial Fulfillment of the Requirements for the Degree of

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Department of Interior Design
University of Manitoba
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Acknowledgements

Well, what does not kill you makes you stronger, so I am feeling pretty good. I would like to take a moment and thank the people that made my practicum possible. To my committee, thank you for your patience, commitment, and knowledge. To my family, this whole thing would not have been possible without your unwavering support. I love you and thank you. To my friends, this journey would have ended long ago without your laughter. I could not have asked for a better group to fight the fight with.

Thank you,
Jen

Abstract

To demonstrate the importance of interior design on impacting users' experiences in a healthcare facility, the practicum redesigned the Ambulatory Services Unit (ASU) at Columbia Hospital in West Palm Beach, Florida. With consideration of the context and structure of the United States healthcare system, and the role of ambulatory care within that delivery system, the practicum identified two design typologies relevant to the design development of a medical facility. Design strategies from each design typology were established to inform the design of the ASU. Privacy, user satisfaction, visual concept, and programmatic requirements emerged as critical issues. Spatial needs required an addition of approximately 4,500 square feet to the existing unit, making the overall square footage of the ASU approximately 8,000 square feet. The design was developed and measured against its responsiveness to the following four priority statements: The design should consider the privacy and interaction of all users, and how interior design can facilitate appropriate amount of privacy regarding occupant, use, and time. The design should provide a comfortable environment for all users, through spatial articulation, furnishings, material selection, and color application. The design should create a visual concept that reinforces users' expectations of control, comfort, and dignity. The design should support the delivery of quality care in an effective and responsive manner. The final design solution responds directly to these priorities.

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Introduction

Purpose

Healthcare environments are being transformed. Past design practices are no longer suitable in the modern context. From the middle of the last century, medical environments were developed solely for housing functional requirements and equipment with minimal consideration for users and their experiences, leaving an architectural legacy of fear and desensitizing spaces. The purpose of this practicum was to renovate one such environment to provide a positive experience for users while making the unit more marketable for the hospital corporation.

In our current paradigm healthcare providers find themselves in one of the largest and most competitive industries in the United States. In their attempt to find new ways to attract and retain patients, physicians, and staff, hospital corporations are beginning to use the physical environment as a marketing tool. The importance of the physical environment has been demonstrated in various other architectural typologies such as retail, education, residential, and corporate environments. This impetus is permeating the healthcare setting, beginning with medical offices, children's wards, and birthing centers where the users' expectations vary from that of typical medical facilities. Now, these design strategies are being applied to more traditional medical environments, such as acute and long term care.

The purpose of the practicum was to renovate the Ambulatory Services Unit (ASU) at Columbia Hospital in West Palm Beach, Florida. To create a visual concept for the unit based on a calming, experience driven concept, the practicum design adapted theories and practices from retail and residential design strategies. The outcome is an environment that demonstrates how healthcare facilities can positively affect users' experiences.

The intent of the practicum was to design a medical facility which would provide a relaxing and calming environment for users through the development of a

strong visual concept. The design would also respond to programmatic requirements of the users. The final outcome is a redesigned ASU that challenges traditional notions of healthcare design, through the application of materials, details, color, and spatial articulation. The new design speculates on the projected revolution of how healthcare environments will meet the shifting expectations of patient-consumers.

Rationale

The rationale for using residential and retail design strategies is apparent in current literature. This literature suggests that hospitals can be reinvented as a means of creating environments that are not generally associated with the anxiety and fear of medical facilities but more closely with the security of home and the pleasure of shopping. As Barbara Flanagan (2000) suggests, "In an effort to romance paying customers, hospitals are pretending to be other places: homes, hotels, health clubs, shopping malls, even main streets" (p.) In an attempt to make healthcare environments more "friendly," these design models are being applied to healthcare environments. The practicum highlights two design models and examines key design strategies as a means of articulating the key design concepts that will be apparent in the design of the ASU.

Currently in the field of healthcare design, changes to the healthcare system and in social perceptions of healthcare facilities call for a re-examination of past design strategies. Purves (2002) suggests,

> The transition from a provider-centered to a consumer-centered healthcare system is only one among a number of profound and interrelated paradigm shifts currently active and shaping the emerging social and technological climate in which architects, healthcare and hospital administrators and planners, healthcare providers and public policy makers must collaborate to create hospital and healthcare facilities with quality, cost effectiveness, and flexibility sufficient to carry them through the twenty-first century. (p.)

It is important that future healthcare environments provide more than a space for the administration of healthcare; they must also provide users with a comfortable and relaxing experience similar to those found in residential and retail environments to reduce anxiety and promote user dignity.

There has been a transition in healthcare which is reflected in facility planning. New healthcare environments have benefited from other models of design to create physical spaces that more appropriately meet the needs of emergent functions and users. "The new non-institutional paradigm seeks, through design, to empower the individual, not to debilitate him [sic]. Architects are turning from the traditional institutional models to retail, hospitality, and residential models of design in order to create friendly, non-threatening hospital environments." (Miller and Swensson, 2002, p.23) The practicum examined retail and residential design strategies relative to their implications for the design of the ASU.

Practicum Process

The purpose of the practicum was to renovate the ASU at Columbia Hospital by addressing current users' expectations of healthcare facilities. The broad nature of the design problem has required constant and considerable paring down and continual reassessment of the project scope. After considerable reflection, three questions which brought into sharp focus the practicum's purpose:

What would the ASU sell?

Who would the ASU sell it to?

What would be unique about the ASU?

The process began with an interest in the current state of some healthcare facilities in the United States. Plagued by lack of space, inappropriate spatial configurations, and a general deterioration of finishes and furnishings, these healthcare environments are detrimental to the activities and users housed within.

Based on changes in user expectations, and the corporate nature of healthcare providers in the United States, the practicum was conceived to create more positive and appropriate environmental conditions. This, generally speaking, is the main aspiration of any good designer, so, again two questions arose: "What was unique about this practicum," and "How would it provide the design community with more information than exists currently?"

Initially, research was done on three design typologies considered to be relevant to the design of a medical environment. The corporate design typology was selected on the basis that hospital and healthcare providers are actual corporations, with similar organization hierarchies and a strong concern for the bottom line. The second typology investigated was retail. A considerable amount of literature suggested that new hospital design ought to be based on shopping mall organizational principles and aesthetics in an attempt to create more pleasant and familiar environments for patients. The residential design model was the final typology investigated for the practicum. Again, the literature suggested that residential furnishings and finishes could provide patients with comfort through the familiarity of their design. Also investigated was current literature on medical facility design. It was the intention of the practicum to distill the various component parts and then combine them into guidelines for the development of a healthcare environment. However, it was unclear as to how this synthesis would occur. Eventually it became evident that a shift in perception was necessary to make the practicum viable.

The corporate design typology has very little to do with the design of the physical space and much more to do with operations, organizational processes and hierarchies. It proved difficult to ascertain a specific design vocabulary from the corporate design typology that was directly applicable to the design of a healthcare environment. However, the research undertaken for the typology proved useful in

understanding the rationale for creating better healthcare facilities from the hospital corporate standpoint. Understanding the importance of the physical environment as a business asset is relevant in all business endeavors, including the healthcare industry. Researching corporate environments and organizational strategies was relevant although the application of the information shifted from a distillation of the design typology to understanding the importance of design in the United States' healthcare system and its effect on the bottom line.

The other two design typologies (retail and residential) were more relevant (from an interior design perspective) for extracting visual and spatial strategies. As the practicum evolved, it became clear that, instead of deconstructing design typologies to inform the design of the ASU, it would be more appropriate to investigate how their design strategies could assist in creating a contextually more appropriate design for the ASU. The information discussed in the literature review about the retail and residential design strategies has been applied in the development of the program, design guidelines and the final design solution. Each set of design strategies informed the design development at the conceptual level as well as the programmatic and functional considerations levels.

The most challenging part of the process was identifying the scope of the practicum and how the various pieces would come together to create a design solution. After compiling information from the literature, identifying users, and considering the appropriateness of designing a calm and relaxing experience, it was evident that a visual identity for the project was necessary. The practicum discusses the importance of creating a visual concept for the ASU to attract patients, staff, and physicians to the facility. Therefore, it was necessary to manifest the hospital's mission into a physical reality.

With the need for a strong visual image to guide the physical development of the interior design of the ASU, the practicum identified several design styles

prevalent in Southern Florida. In this region of Florida there are several architectural types used to form a vernacular style of sort.

There is the Art Deco style extracted from South Beach in Miami. Miami also spawned the Miami modern style which consists of marble, glass, and steel, highlighted with all white interiors. Key West and Bermuda have also influenced architectural styling with the more casual clapboard, wooden shuttered beach style structures. There is also evidence of Mediterranean style design. Despite all of these typologies, each one seemed inappropriate for the visual concept of the ASU due to cultural and socio-economic implications, which could alienate some of the facility's users. Therefore, the beach has been identified as being an appropriate visual concept. The appropriateness of the beach can be seen from several perspectives. The location of the site is along the Atlantic Coast of Southern Florida. However, the concept was not chosen strictly because it resides near the ocean, but also because of the embedded cultural messages. The beach is a public area accessible by all socio-economic and cultural types. From this standpoint, the beach as a visual concept for the ASU is inclusive for all users of the facility.

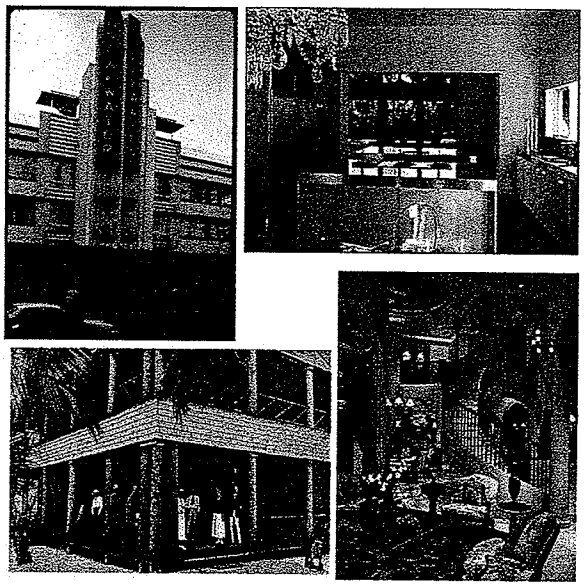


Figure 1: Florida architectural styles

Another way that the concept of the beach is relevant to the design of the ASU is that it deals directly with the core ambition of the design to create a relaxing, comfortable environment for patients to receive treatment. Horizontality is generally considered representative of a state of calm, serenity, and relaxation. The relation of the ocean, sky, and land together create strong horizon lines, which could be

extracted and used in the design of the ASU. A connection with nature and the outdoor environment has been identified by the practicum as an important design characteristic of the ASU. By using a naturally occurring landscape, the practicum has the opportunity to maximize the integration of nature and exterior environments throughout the interior of the project. Through the use of vistas, extended horizon lines, and a connection to the materiality and coloration of the beach, the practicum intends to create a relaxing, calming, serene environment for the ASU users.

The issues of privacy and comfort are also central to the design development of the ASU. The beach provides an interesting perspective on privacy in a public sphere. The way in which people mediate themselves on the beach differs greatly than in other public realms. Individuals' expectations of privacy are shifted when on the beach, from the clothes they wear, to how close they sit to other people with no visual or acoustic barriers. By incorporating aspects of the beach into the visual concept of the ASU, perceptions of privacy can be altered without negatively impacting the experience of the users.

A review of existing design in the healthcare industry was also undertaken to expand and conceptualize the process of physically manifesting the practicum. The investigation identified several key designs that will be used as precedents from which to draw from. They include the CORE AIDs Center in Chicago, Illinois and the Hoag Breast Center, in Newport Beach, California.

After the literature review had taken shape, it was also necessary for the practicum to develop the design program for the project. This involved identifying the profile, needs and expectations of the users. The practicum also analyzed the existing site, including opportunities and constraints. An inventory of existing and required equipment and furnishing was completed and room data sheets listed the requirements of each area related to lighting, electrical, mechanical, and spatial.

The design program culminated in the articulation of the design guidelines, which ultimately informed the design solution.

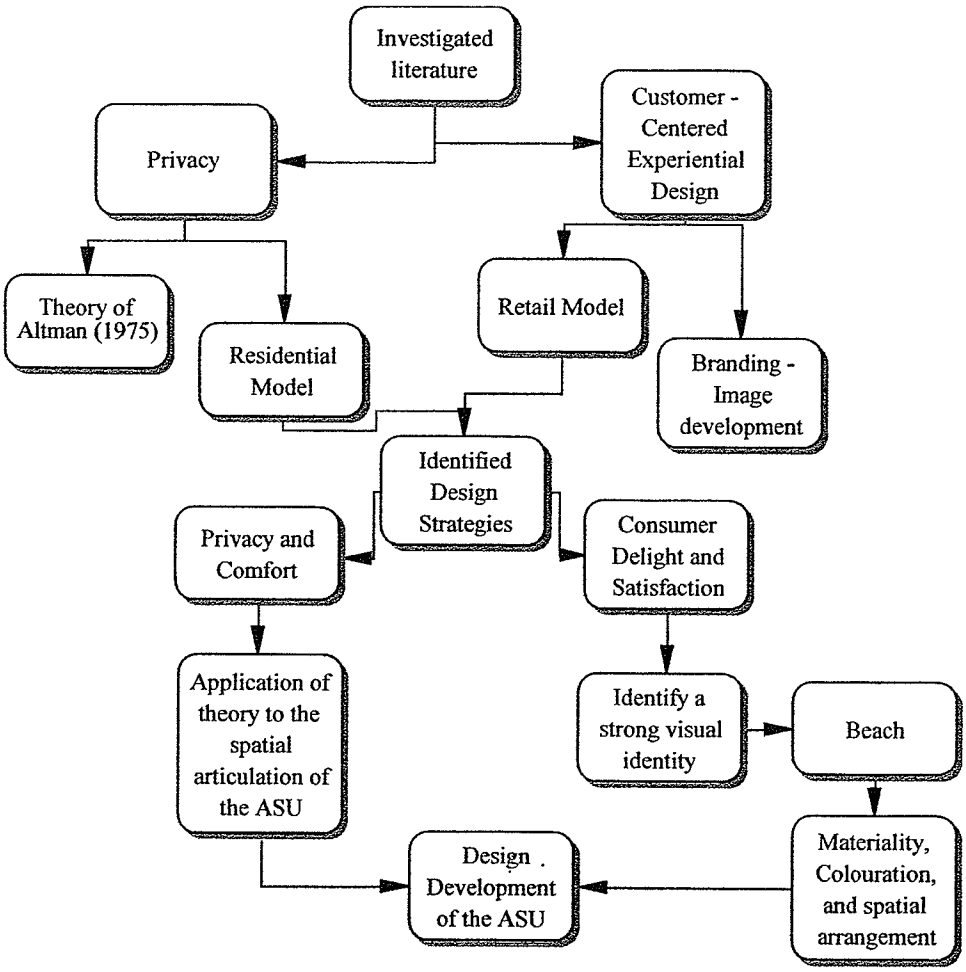


Figure 2: Practicum Process

Section 1. Context

U.S. Healthcare System – Overview

Providing a brief overview of the constituents of the United States healthcare system is intended to frame the context in which the ASU is situated. This overview describes the major stakeholders within the system, and their roles in shaping the current paradigm. It is also important to point out that the healthcare system is not perfect or static. Economic, political, and social issues are continually shifting the landscape of healthcare, and make it difficult to predict where healthcare is heading.

From an economic standpoint, health care is a major industry in the United States. Healthcare consumes 14% of the gross national product and now exceeds $1 trillion in costs (Sultz and Young, 2001, p.1). The scale and scope of health care makes it a political matter. Policymakers and politicians use health care for political means, and, in the end, to gain the votes of citizens. In the hands of citizens, the very people using the system, health care becomes a social, and directly personal issue. The healthcare industry touches every person living in the United States, making it an economic powerhouse, politically volatile subject, and socio-economic definer of the have and have-nots. Implications of the health care system affect every individual's quality of life.

Currently, the key issues shaping policy and delivery systems center around increasing access, while containing or reducing costs of delivery, and maintaining quality care. The ambitions are lofty and, achieving an equilibrium is difficult because of opposing aspirations of the various stakeholder groups. It is not the intention of the practicum to argue for or against any stakeholder group, or to provide an opinion on how an equilibrium could be reached, but rather to present the groups and issues currently shaping the United States healthcare system. The following section identifies the stakeholders and their roles.

Stakeholders

The United States health care system is comprised of various stakeholders who create a complex matrix, where the component parts contribute and monitor one another's actions, and, in some incidents, act in opposition. The major stakeholders include the public, employers, healthcare providers, hospitals and other healthcare facilities, governments, and managed care organizations.

The public's role in health care is increasing as patients become more informed about their own health and strategies for maintaining it. Health care consumers "are demanding better customer service, they want to be involved in medical decision making, and they will reach out to alternative therapies as a part of their medical care. The corollary of increasing consumerism and segmentation in health care is tiering –a widening gap between rich and poor." (Morrison, 2000, p.5) The issue of access is central to consumers. The way health care insurance is attained is generally through an employer. Losing one's job can leave individuals and families without healthcare coverage and vulnerable to limited access and financially prohibitive costs.

The United States health care system is dependent on employers to provide medical insurance to their employees through group coverage and other policies. Employers generally offer health insurance to employees either as a benefit of the job but, more commonly, at a monthly fee or insurance premium. The healthcare coverage provided through insurance ranges dramatically, so the quality of the policy is solely dependent on the type of insurance that the employer is willing to supply. Individuals can buy more extensive coverage, but the cost of the premium is their responsibility.

Medical professionals also maintain an important role in the health care system. Physicians, nursing staff, therapists, and medical specialists are just a few of the types of care providers. Providers and patients used to have an exclusive

relationship where care was provided on the basis of need. Today, medical decisions regarding the treatment of patients are not being made solely by physicians, but also involve insurance companies, hospital corporations and policy makers. The economic ramifications of healthcare become a factor for physician and patients in choosing treatment options. Quality health care can depend on insurance coverage and financial feasibility.

Separate from providers, hospitals and other health care facilities also have a role in defining the United States healthcare system. The major impact facilities have on healthcare is the delivery system. How, where, and when health care is provided depends on the availability of healthcare facilities. The United States does not lack for health care facilities, but access is often restricted or denied based on inadequate or limited health care insurance. Various healthcare facilities are generally connected through a governing umbrella corporation that may be a member of a specific insurance group, thereby providing services to patients covered under specific insurance companies and policies. There are various types of facilities including general, specialty, teaching, rural, profit or not-for-profit, independent, or multi-facility. (Sultz & Young, 2001)

The healthcare system, although a private industry, has substantial government involvement at federal and state levels. The government injects a large amount of money into healthcare to deal with issues of access, quality, and cost. The government also struggles to provide care to all citizens. Programs such as Medicare and Medicaid are examples of government initiatives intended to provide quality healthcare to user groups prone to exclusion. These groups include the elderly, and the poor. Healthcare also generates significant financial benefits to governments through taxes, employment, and the growth of peripheral industries.

Managed Care Organizations (MCOs) and other insurers provide the financial backbone of the United States health care system. MCOs can be Blue Cross or Blue

Shield, or can be owned by insurance companies, physicians, or consumer cooperatives (Morrison, 2000). The most common types of MCOs are Health Maintenance Organizations (HMOs) and Preferred Provider Organizations (PPOs). "MCOs may directly employ medical staff, as in the staff model, or contract with independent providers or Individual Practice Associations (IPAs), or any combination of arrangements in between. Whatever the arrangement the provider is always economically accountable to the payer." (Sultz & Young, 2001, p. 15) There are two distinct type of coverage MCOs provide to users. Coverage can be provided on a user fee basis, whereby if medical attention is required the user pays for the service in whole at the time, while another type of coverage are pre paid health plans. In pre paid plans, "consumers pay a set fee in advance to cover a specified array of services in a particular time period." (Sultz & Young, 2001). HMOs also use this system.

Understanding the United States healthcare system requires extensive knowledge and experience with the system. The overview presented here is intended only to provide a cursory identification of the primary stakeholders and their role within the system. The United States health care system is currently facing issues of access, quality, and cost. In the future, with the aging baby boom population, it is likely that other issues will develop, and current ones will intensify if left unresolved.

Ambulatory Care in the United States Healthcare System

Ambulatory care is an important component of the United States health care delivery system and is a significant factor in providing medical treatment to Americans. The delivery system for ambulatory care involves several different groups including physicians' offices, stand alone surgery centers, community clinics, as well as hospital emergency rooms and ambulatory services units. Outpatient surgery now accounts for over 50% of all surgeries performed and nationwide, ambulatory surgery industry revenues total $5 billion. (Sultz & Young, 2001, p. 126) This developing trend is driven by several factors including financial cost, consumer-patient preference, and advancing technology.

The outpatient framework has provided hospitals with a means of administering care to patients, while reducing costs. The growth of outpatient care centers and the increased revenue generation can be found throughout the United States healthcare system, and hospitals are hoping to claim a piece of the market share. In 1980 outpatient services revenue constituted only 13% of total voluntary hospital revenues in the United States. The figure rose to 29.9% in 1995 and 35.3% in 1997. Today, expanding outpatient revenue is projected to exceed a total of one-half of all hospital revenues. (Sultz & Young, 2001, p. 117). Outpatient facilities within the hospital context will increasingly demand more space and capital expenditure to continue to attract patients.

The empowerment of healthcare consumers has heightened the appeal of outpatient care. Informed consumers understand the benefits of less invasive medical procedures, the atmosphere of outpatient facilities, and the cost reduction of not having to be hospitalized. Patients experience fewer complications, much faster recovery, and less disruption to normal activity from ambulatory care than from hospital inpatient surgery. (Sultz & Young, 2001, p.129) This makes ambulatory

care a win-win situation for hospitals, because keeping patients satisfied increases the perception of quality care, which in turn generates more business.

If not for the advancements in technology and medical techniques, the effectiveness of outpatient care would be limited dramatically. In addition to the numerous new diagnostic and treatment tools available in the outpatient setting and the advanced technology that makes outpatient treatment safer and more effective, financial mandates also have played a major role in moving services to the ambulatory arena. (Sultz & Young, 2001, p.110) There is a partnership between technology and outpatient care in a hospital setting because technology provides physicians with treatment methods that are less invasive and more effective, while ASUs process larger patient volumes, making the technology cost effective.

Outpatient care in the United States healthcare delivery system is a key player in providing access and quality care while reducing costs. It will undoubtedly continue to grow as consumer-patients demand greater access to care in a more pleasant atmosphere. As technology advances procedures now limited to inpatient care will likely shift into the realm of ambulatory care as well.

The Graying Baby Boomers – Effect on the U.S. Medical System

The baby boom bulge as it is often referred to, is the increased birth rate following World War II. Seventy-five million babies were born in the United States between 1946 and 1964, which is 70% more than during the preceding two decades. (Sultz & Young, 2001) As the baby boom population ages, it will put greater pressure on the United States medical system. By the year 2050, it is estimated that 30% of the U.S. population will be over the age of 65. The number of persons over 85 will double, but the under-35 population will decline by 10% (Sultz & Young). With higher levels of education and increased financial stability, the baby boom generation is likely to demand direct access to quality care at a reasonable cost. There is also the potential that the system will become unbalanced as baby boomers retire, leaving a smaller population of trained professionals to take care of them.

The baby boomers have different expectations and demands than their predecessors; they are well versed in technology, the internet, and their health. While the older adults of the future will stay more active after retiring and be better educated, the burden of incurable chronic diseases of later life will be an enormous challenge to the health care system. (Sultz & Young, 2001). Despite ever increasing medical advancement, cancer, arthritis, diabetes, and Alzheimer's disease are still without a cure. Treatment methods have been developed to extend quality of life, but this will ultimately place significant pressure on the healthcare system. As baby boomers age, their demands for access to medical treatment will grow thus making them the major user group of the health care system.

The healthcare system will have to evolve to respond to the needs of this emerging demographic. Chronically ill and medically complex older patients need a multidisciplinary mix of services that must meet a broad spectrum of physical, medical, and psychological needs. (Sultz & Young, 2001) Resources, especially

human, will come under great pressure to support this ballooning population. The generations following the baby boom are significantly smaller, which will leave gaps in the work force as the baby boomers move into retirement, which will strain medical professionals to provide quality healthcare to the population. The United States government will also be burdened with providing the growing retired population with access to healthcare, because after the age of sixty-five the government covers medical expenses.

The baby boom generation has affected changes in our society due in part to their greater educational background, control of wealth, and as the drivers of consumerism. They will also affect the delivery system of healthcare as they age into retirement. Their expectations as consumers will shift the way medical treatment is provided.

Healthcare Facility Design

The Past Fifty Years – Architecture of Anxiety

Hospitals of the past, as suggested by Miller and Swensson (2002), are the antonym of the current model in healthcare.

> Nothing would seem more natural than to look at hospitals themselves for examples of healthy architecture, since by definition they should be structures intended primarily to promote the good health of their users. Yet, as everyone knows, hospitals have traditionally been distinctly unhealthy environments, places to avoid unless you are so ill that you cannot do so. Not only are many hospitals unhealthy in the strictest sense of the word, they are far too often inhospitable." (p.33)

Healthcare environments of the past were generally designed to meet the needs of sanitation, technology, and administrative effectiveness; little consideration was given to the needs of patients, staff, and visitors. The environments generated by these design criteria created environments that unintentionally fostered an atmosphere of uncertainty, coldness, and impersonality.

The research and development conducted during World War II paved the way for radical advancement of medical technology. Precedence was given to the power and wonder of technology to save and improve human life. Little focus was placed on the individual whom was being saved. In the era of mass production, healthcare environments were designed to be efficient and take advantage of emergent technology. "Under the acceleration of medical technology, many hospitals became huge machines, built – or more often, awkwardly retrofitted – to accommodate rapidly changing equipment and ever more bureaucratic staff. In the name of technology a host of dehumanizing structures were built, and, in the name of sanitation, sterile environments were created." (Miller & Swensson, 2002. p.33) Unfortunately, many of these spaces still exist today, although the focus of healthcare has shifted more towards the individuality and expectations of patients.

Even today, healthcare environments remain unfamiliar, disorientating spaces for patients and visitors alike. Anxiety and stress can be heightened when the physical environment is insensitive to the social and physiological impact of occupying the space. The spatial design is one of the first experiences a patient or visitor has when entering a healthcare facility. It provides information on expectations, quality, and organization before an individual has an encounter with staff. "Patients and visitors represent particularly vulnerable user groups. They are virtually powerless in what they often perceive as an intimidating environment. They visit the health care facility under what are often emotionally stressful and physically debilitating conditions. At this time in their lives, they need a supportive, non stressful environment, and they have little capacity to deal with a complex or confusing one." (Carpman & Grant, 1993, p.8)

The perceptions of the physical environment can shape the overall impression of a patient or visitor's healthcare experience. "Illness is anxiety provoking, and if medical personnel are officious, bureaucratic, and impersonal, well, it is hardly the doing of hospital architecture. But the architecture of the hospital is an expression of the cultural and emotional dynamics of the institution. It is as much an expression of these dynamics as the words and demeanor of the medical professional and others who attend patients." (Miller & Swensson, 2002, p.37) Design is a critical component in creating an environment capable of exhibiting the appropriate image as well as facilitating all necessary activities.

Shifting Paradigm – Current Situation

What is the role of design in Healthcare?

The activities and individuals involved in the healthcare system must have a place to come together to collaborate; the physical structure of a healthcare facility is a support system for the administration of healthcare. As Eleanor Nesmith (1995) points out in *Health Care Architecture: designs for the future*, "Architecture provides a critical link between the patient and the health care professional, and the delivery of quality care is often dependent on this relationship. The optimal clinical setting must address and treat not just the medical, but also the emotional, social, and psychological needs of patients."(p.11) Not only are patients' needs necessary to understand, but the other users of the space including staff, visitors, and administration, all have distinct activities, expectations, and needs. "The emphasis of healthcare architecture today must be on improving the quality of the environment for patients and caregivers alike. Architects can support healthcare management best through efficient solutions, but not those that ignore the environment and the quality of patient – caregiver encounters that it supports." (Kliment, 2000, p.5) The physical dimensions of healthcare environments are a collection and matrix of both complementary and contradictory elements of activities, users, and perceptions that require a holistic design approach.

The importance of design in the healthcare setting is understood as a significant contributor to the overall effectiveness of the healthcare administration. In *Design that Cares: Planning Health Facilities for Patients and Visitors*, Carpman and Grant (1993) identify five trends in health care, "Design research can be examined in relation to five especially relevant trends in health care today: marketing orientation, recognition of the value and importance of health care facility design, sensitivity to the patient's perspective, recognition of the role of families and

visitors, and emphasis on environmental accessibility."(p.17) As outlined by Carpman and Grant, the architecture of healthcare facilities plays a role in attracting and retaining patients, supporting activities and users, and responding to issues of control, anxiety, privacy.

"Good architecture in the healthcare setting starts by recognizing the unique functional needs of the healthcare environment, but it does not end there. It must also meet the special needs of the people who use such facilities in times of uncertainty, stress, and dependency on doctors and nurses." Kliment (2000) goes on to suggest that not only must the designer consider the above mentioned criteria but it is also necessary that the design provides users a positive experience through clarity of spatial design. Kliment states, "It must recognize and support patients' families and friends by providing pleasant spaces and access to information about patients' status and treatment options. Perceptual clarity must start from the moment a patient arrives on the healthcare campus to the moment of treatment and discharge" (p.7). The design of the environment provides an opportunity to minimize negative perceptions of the healthcare facility, while reinforcing an individual's sense of control, security, and privacy.

It is important in healthcare design to identify the appropriate design question to be answered and Kliment (2000) suggests, "The problem to be solved here is to find a way to continue delivering a high quality of care and access in a setting that is also highly supportive of human relationships during times of great anxiety and fear" (2000, p.7). A healthcare facility does not simply house equipment and technicians; it is a place where relationships are intensified by life threatening situations, and the strength of human survival. Therefore, it is necessary for the design to synthesize all aspects of a healthcare facility's characteristics, which includes sensitivity to user experience.

The role of design in healthcare can be seen as a framework of support, which suggests how activities and users might inhabit the space. In *Building Type Basics for Healthcare Facilities*, Kliment (2000) states, "Architecture can uniquely serve the patient through its art and technical expertise by providing an environment that is fully supportive and familiar, lending respect and dignity to the patient's life-giving encounters" (p.7). The importance of design in healthcare should not be over looked; it has the opportunity to provide and create experience for all users, despite the anxiety and fear that can be generated from being in a healthcare environment.

Why is design important in a healthcare facility?

North American healthcare systems are in a state of re-examination and evolution due to economic pressures, technological advancement, and social expectations; the physical setting of healthcare is not exempt from this inquiry. The healthcare environment is the physical manifestation of current changes, and thereby is an indicator of how administrators and designers are responding to the demands of the public, economic restrictions, and the integration of technology.

> As the United States moves into the twenty-first century, our system of healthcare delivery is under enormous pressure to change – to reduce its costs to society and to provide greater convenience in a manner more responsive to its consumers. Seldom has an industry that serves all Americans been under such compulsion to reinvent and, in doing so, redefine the roles of its component parts – institutions, caregivers, and the physical environment. (Kliment, 2000, p.1)

Redefining the role of healthcare facilities within the changing healthcare framework requires the design profession to not only grapple with shifting functional requirements of the space, but to also understand the changing roles and expectations of users and their impact on the design process and product. "The operational organization and the physical setting of hospitals are in the process of a complete overhaul. Diverse factors – technology, regulatory requirements, codes,

social attitudes, reimbursement policies – influence the way health care facilities are programmed, designed and built" (Nesmith, 1995, p.8).

The shifting role of healthcare environments is being shaped by the need for technological integration, the expectation that the healthcare facilities will have a pleasant aesthetic quality, and an acknowledgement that the environment must meet not only the physical requirements of patients, but also their social and emotional needs. Despite the change in thought, existing healthcare facilities are often slow to change due to issues of time and economics. Therefore, there are a considerable number of medical environments in which the expectations of care have changed but the physical environment has not to reflect this new paradigm.

Consideration for user comfort, and aesthetic quality must be integrated with consideration for technology, sanitation, and cost effectiveness.

> Technical design considerations, however, such as making room for a computerized tomographic scanner or a crash cart, are of remote concern for many users of a health care facility. Of immediate concern is the availability of a comfortable place to wait, the accessibility of rest rooms for someone in a wheel chair, or the ability to find a particular destination easily. The design, therefore, must balance technological needs and human needs. (Carpman & Grant, 1993, p.7)

When the design is developed with a concept of respect and dignity, the physical environment will embody characteristics that communicate to users their importance and reflect the quality of care being given. In *Hospital Builders*, Monk (2004) suggests that "A health care building, in which patients feel good about their environment as well as their treatment, will help to reduce stress and speed recovery. A well-designed human scaled building is therapeutic and helps ill people to recover their health while retaining their dignity and identity"(p.33). It is clear in the literature that design must affect the healthcare setting by not only meeting the functional needs of the users, but it must also provide an environment, which is pleasant, and supports users' emotional and social needs along with their physical requirements.

How does design contribute to the administration and image of healthcare?

Healthcare design cannot only provide a space for the efficient administration of medical services, but it can also embody the philosophical mission of the individual establishment. Image is used to connote the mission of the healthcare facility, as well as the standard of care a patient can expect to receive. A concern for the individual occupant is central to the design philosophy of a healthcare facility, and a significant goal for the designer, to physically manifest into the healthcare environment. Carpman and Grant (1997) suggest the design can improve the overall experience of healthcare, "

> From the moment a patient or visitor arrives at a health care facility, the design will convey certain symbolic messages. The nature of these messages is shaped through planning and genuine concern for the human experience. Humanistic design must be more than just an after thought. It must move health facility design from its "hospital green" image to a sense of caring for the whole person" (p.7).

The image of a hospital can have a physical, sociological, and psychological impact on the users of the space, especially patients and visitors who are entering an unfamiliar environment. The design of a healthcare facility must respond to the various aspects of users' needs, and represent the paradigm of holistic care.

It is important for administrators to realize how the design of the environment can facilitate improved working conditions, which in turn can enhance staff effectiveness, morale, and productivity. From a monetary standpoint, design can aid healthcare facility administrators by retaining, and utilizing staff effectively. "

> A major percentage of running costs are on staffing. The quality of the work environment, its appearance, its layout, safety and security are significant factors in staff efficiency and recruitment. Well-designed, long lasting flexible buildings represent good value for money. Especially when built with maintenance free materials and low running cost equipment. Good quality enhances public perception and the hospital's reputation" (Monk, 2004, p.33).

Design works on several levels to aid healthcare organizations in reaching their goals, while supporting users physically, socially, and psychologically.

Perceptions of healthcare facilities are formed through interaction with administration, previous experiences, encounters with other users, and the physical environment. Creating a positive experience is not the sole purpose of the environment, however, a successful design can set the stage for positive experiences by all users. This can be done through providing appropriate space for activities and creating a calming and pleasant aesthetic.

> Healthcare organizations must focus on improving the encounters between patients and care providers in order to make patients feel valued. Health care consumers best remember the quality of their contact with staff. Moreover, the quality and character of the environment goes a long way toward supporting positive interactions between caregivers and patients"(Kliment, 2000, p.5).

A medical facility reinforces the importance of users dignity and control through the physical manifestation of the interior enviroment.

Section 2. Critical Issues – Interpretation of Residential and Retail Design Strategies

Privacy – Investigating Residential Design Strategies

The issue of privacy is central to the concept of home, as well as in a healthcare setting. In today's milieu, personal privacy is paramount in the healthcare system, however, quite often privacy is sacrificed because of overcrowding and outdated healthcare environments (Dennis, 2000). Understanding the philosophical, psychological and physical dimension of privacy will inform the practicum, providing a basis in which to address privacy in a medical setting. The home typology provides rich examples of the application and inhabitation of environments developed to deal with issues of privacy and intimacy.

Comfort and security are also components of the home typology. Understanding these issues in a medical setting is important to heighten patient satisfaction and staff effectiveness. A state of comfort is key not only to the physical status of an individual, but also their emotional and social condition as well. The typology of home provides an arena to investigate and break down the components, which provide the inhabitant with an opportunity to create comfort for themselves through the security of the place (Altman, 1975; Shin, Maxwell & Eshelman, 2004).

Privacy in a healthcare situation is crucial for patients to feel comfortable, and secure in the environment, while promoting personal dignity. Discerning the social, psychological and physical aspect of privacy is paramount to understanding the design implications it will have in the ASU. Irwin Altman is a leading expert on privacy, personal space, territorialism, and crowding. Altman (1975) states that, privacy is an interpersonal boundary-control process, which paces and regulates interaction with others. Privacy can involve different types of social units: individual, families, mixed or homogenous sex groups, and so on. The following section is the paraphrased information from Altman's work *Privacy*.

Two important aspects of privacy are "desired privacy" and "achieved privacy"

(Hall, 1966). Desired privacy is a subjective statement of an ideal level of interaction with others - how much or how little contact is desired at some moment in time. Achieved privacy is the actual degree of contact that results from interaction with others. If the desired privacy is equal to the achieved privacy, an optimal state of privacy exists. There are three behavioral mechanisms used to achieve privacy goals: verbal, paraverbal, and body language. Verbal content is used to convey discrepancies between desired and achieved privacy. Paraverbal can be language style, vocabulary selection, pronunciation, vocalizations, and voice quality. And finally, body language involves the use of various parts of the body to communicate.

Personal space is the invisible boundary surrounding the self; intrusion into this space creates tension or discomfort. The following suggests distances related to relationships with the individual (s) in our surroundings. Intimate distance, ranging from body contact to a distance of about 18 inches, which permits extensive communication involving touch, heat, sound, and smell. Personal distance spans from 1.5 to 4 feet. Social distance, 4 to 12 feet, occurs in impersonal, work or casual relationships. Public zones, beyond 12 feet, are appropriate for formal meetings and interactions with higher-status persons (Hall, 1966).

Territory is another aspect of privacy. Primary, secondary, and public zones have been identified by Altman as the three types of territorialism used in our culture. Driving factors that determine territoriality generally include the relative duration of users' claims to the space and the degree of control held by the occupant(s). Primary zones are owned and used exclusively by individuals or groups, are clearly identified as theirs by others, are controlled on a relatively permanent basis, and are central to the day-to-day lives of the occupants. The secondary zones are often the bridge, between the total and pervasive control given to participants in primary territories and the almost free-use of public territories by all persons. Due to their semi-public quality, these zones often have unclear rules

regarding their use and are susceptible to encroachment by a variety of users, sometimes inappropriately. It is important to make clear rules of use and ownership. The qualities of the space relating to distinctions among primary, secondary, and public territories must also be considered. The public zones have a temporary quality, and almost anyone has free access and occupancy rights. In general, public territories are relatively fragile mechanisms for control of self/other boundaries. They are heavily dependent on institutions, norms, and customs rather than on rules set down by an individual user.

Cultures have certain norms and customs to facilitate privacy management. Examples in Western culture include the role of the bathroom in our culture- a place where people can be quite certain of not being intruded on when the door is closed. Closed doors have a message of 'leave me alone' or 'knock before entering'. Thus our culture places considerable importance on physical barriers as privacy mechanisms.

Privacy is a dialectic or bi-directional process, which involves both a restriction of interaction and a seeking of interaction. Privacy is not solely a 'keep-out' or 'let-in' process; it involves a synthesis of being in contact with others and being out of contact with others. The desire for social interaction or non-interaction changes over time. The dialectic nature of privacy works with the optimizing process of privacy. We mediate our interactions. We do so to find a balance, an optimized state of privacy. This optimized state is continually in flex and dependent on a desired level of privacy. Privacy is an optimizing process. In other words, there is an optimal degree of desired access of the self to others at any moment in time. Privacy is an input and output process; people and groups attempt to regulate contacts coming from others and output they make to others.

The function of privacy has several roles: control and management of interpersonal interactions, plans, roles, and strategies for dealing with others, and

features of self-identity. Invasion of privacy is especially harmful because it destroys individual autonomy, self respect, and dignity by taking control of a person's life away from the person and in a sense demeaning the worth of the person. Thus it is a loss of control to others that is serious, not so much the mere exposure of information.

Home is a refuge that fulfills our need for privacy. However, as stated by Marcus (1995), the reason we create a home environment is for privacy, security, and intimacy. Firstly, the need for privacy, a refuge, is central to the purpose of the modern home. "Ultimate goals can be cultivated, shelter from the intrusions of public life. To be able to relax, be comfortable, and close with other people. These are ultimate goals, whose attainment is made possible in the home" (Csikszentmihalyi & Rochberg-Halton, 1981, p.22). Privacy and security allow for the free expression of self, without fear of prejudice and/or humiliation. Varying degrees of privacy exist within the home, similarly to the outside world as described by Altman (1975). Time and activity are determinants of the expectations of privacy. Busch uses an example to identify how such a shift can occur in the home, "The proposal that a bathtub might convert to a conference table suggests a new attitude towards privacy. It is no longer necessarily something associated with place. Rather, it may be defined by a change in activity or by a specific time. Often, it seems, privacy is defined not by space, but by a specific activity..." (Cline, 1997, p. 14). Therefore if privacy is based on perception, home responds by providing the flexibility to adjust to shifting expectations.

The term intimacy evokes a different meaning than privacy. It suggests the want to be close, comfortable, and secure. Home can also satisfy the need for intimacy as well. We need home as a respite from the rest of the world, a place to relax, get comfortable, and be ourselves. Home provides shelter not only from the climatic environment but also from the emotional, mental, and physical stress the

outside world can place upon us. "In troubled times, they all sought to experience life away from social definitions of success or failure. From there, these primitive huts marked persona, original inquiries into the ever mysterious nature of human existence" (Cline, 1997, p. 14).

The issue of privacy in a healthcare setting is paramount. Therefore, the information uncovered related to Altman's definition of privacy and the design strategies employed in residential design to deal with privacy have direct implications on the design of the ASU at Columbia Hospital. The major components to be considered when dealing with the issue of privacy include:

1. Time related to space – a shift in the level of privacy required could change over time based on activity and occupant(s).
2. Activity related to space – consider the activity being undertaken related to the amount of privacy provided.
3. Participants related to space – concerned with the ability of an individual to mediate their relationship to other people within a space.

Based on the components discussed above, residential design has developed several design strategies for dealing with the issues of privacy, comfort and security. With an understanding of how residential space can be articulated to deal with the issues of privacy, the practicum can derive important information regarding the physical manifestation of space and its impact on privacy. The perception of a space can change based on the activity being performed, and can directly impact the required levels of privacy. The example of using the bathroom as a conference room by Busch demonstrates how time and activity can shift the occupants' expectation of a space. Being aware of this, designers must consider not only the primary function of a space but also possible alternatives to provide options for the mediation of privacy. All three aspects outlined above are interrelated, so, when designing a space, designers must approach the issue of privacy from a holistic point of view related to time, activity, and occupant.

Making it Unique – Retail: Customer Centered Design

Addressed in this section are retail design strategies as they relate to creating consumer centered healthcare facilities. Designers are now using retail models and the theoretical discourse surrounding branding, consumer behaviour, and consumer satisfaction to inform design decisions. The following literature addresses these issues as they relate to retail environment, and then explores the implications retail design strategies can have on the design of healthcare settings. The practicum also describes the goals of a retail design, and how they are achieved through the physical manipulation of space.

What are the goals of retail design?

The obvious purpose of a retail space is to sell a product, image, or service. "To maximize exposure, a good store is, by definition, one that exposes the greatest portion of its goods to the greatest number of its shoppers for the longest period of time" (Kliment, 2004, p.35). Exposure of a product begins in the media through advertisements, then to the outside advertising of a store, and finally inside the space. This exposure creates a familiarity of a product, which will hopefully turn into the wanting, and finally need of that item.

The objective of store design is "recognition factor: a store, large or small, needs to stand out from its surroundings and its competition, regardless of its size. Strategic advantage: A distinctive, memorable personality is a necessary component of a successful, profitable store. The designer's proposed solutions to the retail client's needs must be responsive to basic merchandising concept and to understand the following: context and location, customer base, circulation of traffic, architectural objectives, merchandise spatial allocation" (Kliment, 2004, p.39). These are the main considerations for designing a retailing outlet to maximize success.

Retail design is constantly shifting to maintain cutting-edge designs, to continue drawing customers into the store. Retail design is used as a tool for the branding, and selling of products. There are many factors contributing to the changing face of retail design.

> The dynamism of the building types, so evident in recent years, is one of its most intriguing features. Necessarily responsive to every shift in demographic conditions, location, market opportunities, completion, popular taste, community pressure and consumer technology, it is perhaps of all building types the one, which undergoes the most rapid transformations and most prolific generation of new sub-types" (Maitland, 1990, p.9).

The retail environment provides an opportunity to continually test design theory and the effect environment has on consumer behaviour.

Consumer behaviour is at the root of retail design. The ability to manipulate a customer's behaviour through physical cues is a cornerstone of retail design. The customer, their needs and behaviour, should be the focus of designers. Weisher (1992) verifies this point, "True customer driven design need not exclude the personality of the retailer or designer, but should first identify the customer;s level of comfort and their degree of confidence in the credibility of the store" (p.172). Another goal of retail design should also include creating unique and pleasant experiences for customers. "A retailer's first priority is to make the store's customer feel content – with their purchase, the time they spent making it, and the manner in which it was bought" Weisher, 1992, p.172). The physical design of the store can maximize positive attributes of the store activities, while downplaying negative aspects of shopping.

How are the objectives achieved in the interior design?

In the attempt to attract new consumers, and retain old ones, retailers and designers must endeavor to create new experiences for shoppers. At the core of their mission is to supply consumers with more value. The *Experience Economy*, by

Pine and Glimore (1999), describes customer perception of value at four levels: commodities, goods, service, and experience. Consumers are willing to pay a premium in return for enjoying a better experience. One technique designers and owners are employing to meet the demands of sophisticated shoppers is to create an individual experience for each consumer. "

> Retailers are developing ever more user-centered design and services-orientated approaches. Mass personalization is one of the preeminent concepts driving retailing. As retailers experiment with the concept of creating a unique experience for the shopper, they need to develop new tools to allow them to know the customer better" (Kliment, 2004, p.203).

The interior design of a retail environment is a critical component of developing an experience based market plan. Generating environments that engage consumers by stimulating several of their senses can be one way of achieving the goal of selling.

The visual appearance is generally given precedence over the other physical senses, however as Weisher (1992) points out, Although 90 percent of all images sent to the brain originate with seeing, other senses play an important support role. There are many instances when the senses of hearing, smell, taste, and touch are the first stimuli to register in the brain. The sense of sound is multidimensional (can be detected without knowing the source). The sound that induces more customers to get a positive sensation is the sound of people talking. Smell is a primitive and our reaction is instantaneous. And, finally, the sense of touch can also play an important role in the experience of space. Kliment (2004) discusses the role our senses play in making the decision to buy; almost all unplanned buying is a result of touching, hearing, smelling, or tasting something on the premises of a store. It is the amalgamation of these senses, which creates a journey for customers to undertake during their time within the space. Discovery is another aspect of creating a positive shopping experience. Kliment states, "Stores should seduce shoppers through the

aisles with suggestions and hints of what is to come" (p.35). The physical design is a key component of generating a successful experience based space.

Designing an effective retail space includes several integral parts: individualization of customer services, creating an experience based environment, and enticing consumers to buy through engaging their five senses. "Successful shopping environments are places where people want to be" (Kliment, 2004, p.1). The ability to make people feel comfortable within a space is important, because it increases the time they are willing to spend in one place. This comfort level is what brings people to the mall to participate in all the activities offered. "High customer comfort levels are achieved when all elements of merchandising, store design, and presentation continuously work in synchronization" (Weisher, 1992, p.172). These elements are the physical factors of creating a successful retail environment.

Retail stores play a critical role in branding products, images, and services. In fact, "Many marketers believe that the most influential medium for branding is the store, where the customer makes the final decision to purchase a product" (Kliment, 2004, p.208). The value of retail space is more than a place to house product, and provide services to the public. It is important to create unique experiences for the consumer, which work in direct relation to what product is being sold, and how it is being marketed.

> Architecture and the design of retail spaces may have recovered their prestige as marketing tools but they are only really useful when not only the architectural and design wrappings but also the objects of consumer desire deliver what the architectural setting promises, so that the goods themselves are the real experience in the end (Reiwoldt, 2000).

Purchasing a product is the ~~end~~ result of an environmental experience; the retail space remains a critical element of the marketing, merchandising, and delivery of that product. The same product could be sold in numerous locations, but the

environment in which it was purchased is attached to the item through the consumer's memory.

Why do we shop? Why does the physical design make us want to buy?

The activity of shopping is a central to our North American culture. Therefore, it should not come as a surprise that the environments in which we shop are, generally, highly developed spaces. The function retail stores fulfill is not only the exchange of goods and services, but also the facilitation of interaction with other people.

> People love to shop, but there is another reason why retail space has been ubiquitous: shopping is the foundation of communal life. Whether in the form of a shopping center, a freestanding store, or a street-level shop, retail space makes up the bottom 30 feet of every city. It is the 'glue' that holds the city together. Moreover, retail encompasses many types of commercial, civic, and cultural exchange. Within the retail environment we not only exchange goods and services but also share experiences. This is the heart of what is best about vital communities at any scale. (Kliment, 2004, p.3)

The retail store can be considered community centers of North American cities, supporting the exchange of ideas, codifying cultural expectations, and providing a stage for human interaction. "I saw people rubbing shoulders and meeting their fellow citizens in a non combative environment – not behind the wheel of a car, but on foot. As for hyper-consumerism, commercial forces have always formed the center of the American city" (Rybczynski, 1995, p. 17). Retailing is a significant component of our society, and the shopping environment plays a central role in creating spaces people want to be in.

The physical environment of the retail store communicates many things to the consumer. It is important to understand what brings the customer to a store, what attracts the customer to enter the store, and what motivates the customer to buy. Kliment (2004) suggests that quality, need, value, price, and impulse is the drawing card of retail spaces. Getting a consumer to enter the store can be done through the

use of the store's image, architectural design, signage, and the store's interior. And the action of buying a product is conditional on a customer's perception of value, design, price, ambience, and merchandise presentation. Demonstrating the value, design, price, ambience, and merchandise presentation are all qualities that can be achieved through the interior design of the retail environment. The successful manifestation of the qualities a customer desires is directly linked to the ability of a retailer to sell more. "Designers and merchants can, to an astonishing degree, obtain specific desired results from customers by understanding what those customers expect, and then giving them more than their expectations" (Weisher, 1992, p.6). Retail environments provide an excellent forum for creating positive experiences for users through the physical manifestation of space.

The practicum has investigated the objectives of retail design as well as design strategies used to meet the objectives. With an understanding of retail design practice the intent is to identify what can be used in a healthcare setting. The practicum has identified the critical elements driving retail design as being:

1. Consumer delight and satisfaction
2. Uniqueness – through personalization, experience and visual surroundings
3. Exposure to product or services being provided

It is obvious there is a connection from retail design to healthcare design in the twenty-first century, as illustrated by the practicum. Therefore, the practicum will use the design strategies uncovered by the literature review to meet the needs of the emergent consumer-patient in a healthcare setting. The spatial implication for the practicum will include providing a unique and calming experience for occupants of the ASU.

Implications on Ambulatory Services Unit

Implications of Residential Design Strategies in a Healthcare Setting related to privacy, comfort, and control

The desired amount of privacy, and the ability to achieve it, is of central concern in both residential and healthcare typologies. The difference between desired and achieved privacy resides in the degree of privacy that can be provided related to the functional requirements of the space. Intertwined with privacy is the aspect of control: control over the environment and control over one's self. The varying degrees of control afforded to someone in a healthcare environment greatly differ from that of their home. The lack of control an individual has in a healthcare setting can trigger anxiety, stress, and uncertainty; emotions counterproductive to healing. Addressing issues of privacy and control are very important in a healthcare environment because, unlike a home environment, in a medical setting privacy and control can be limited by spatial configurations, organizational procedure and time.

The use of residential design strategies in healthcare environments has been discussed because of its relevance and emergence in recent healthcare design (Flanagan, 2000; Shin, Maxwell & Eshelman, 2004). The application of this design strategy in a medical setting can be justified for reasons surrounding user privacy, comfort, and control.

A study was recently published in the *Journal of Interior Design* that looks directly at the implications of the perception of "hominess" in a birthing center. The specific environment is not the exact type of ASU found at Columbia Hospital; however the information uncovered in the investigation can be used to extract relevant residential design strategies in a medical setting. The study, undertaken by Shin, Maxwell, and Eshelman (2004), is current research related to the extraction of key design strategies for use in a different typological situation.

The findings of the study suggest privacy and personal control are central to creating a sense of hominess. The use of windows (both interior and exterior) the articulation of transition spaces, and the degree to which the occupant could control and manipulate their environment are all aspects of how interior design can effect patient satisfaction. The study revealed that a balance must be struck between various interior elements. For instance, the degree of privacy must find equilibrium between exposure and isolation (Altman, 1975). Fenestration and transition spaces are examples of interior elements seeking to find the balance. Large openings and small transition spaces can leave patients feeling exposed, while small openings and large transition spaces can create a perception of isolation (Shin, Maxwell & Eshelman, 2004).

Understanding how these issues affect our experiences and perceptions of an environment are central to designing a responsive space, whether it be in the residential or healthcare realm. Figure 1 (p.39) illustrates how the issues of control and privacy are inseparable and must be addressed together in order to respond to healthcare users' needs. The nature of a healthcare setting creates stress for patients by reducing control over the environment, and their person, as well as, limiting the ability of patients to achieve their desired level of privacy. However, it is important to understand that privacy is not strictly the desire to be alone. Privacy can become isolation if the patients' ability to interact is limited or non-existent.

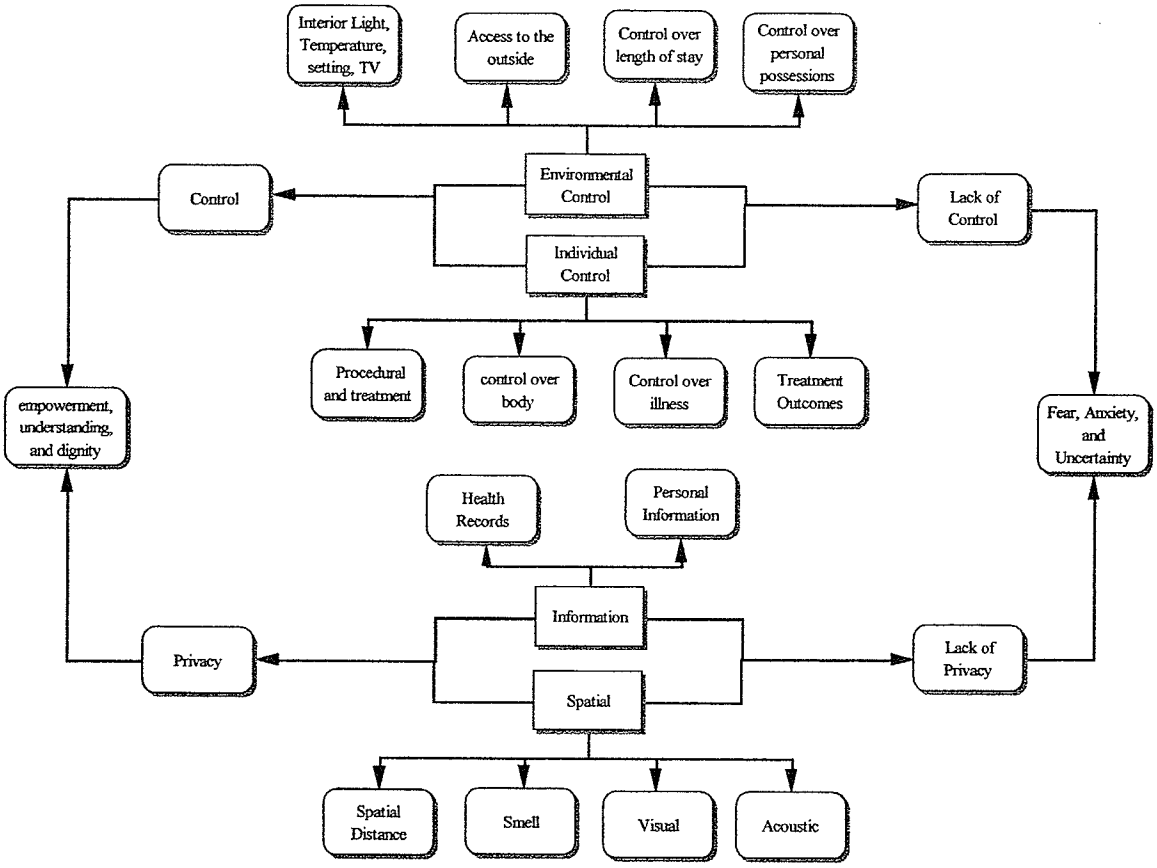


Figure 3: Understanding Patient Experiences: The Effect of Control and Privacy

In the design development of the ASU, it will be necessary to discern the implications of privacy, and control in generating an environment capable of providing a positive experience for users. Addressing these issues in the design development will include consideration of spatial arrangements and adjacencies, views from critical areas (unit desk, and patient centers), visual access to the outside, and individually controlled attributes (lighting, visual privacy, and personal possessions) for both patients and staff. It is important to consider the issues of privacy and control from all users' perspectives and find equilibrium between the

functional requirement, while providing opportunities for individuals to regulate their own experiences.

It is clear that the practicum must deal with issues of occupant privacy and control, with special consideration given to patients' perspectives. The design must strike a balance between the two extremes of privacy, exposure and isolation, while allowing for functional necessities of line of sight for staff, and spatial limitations. Allowing patients and staff control over certain aspects of their environment will also be a consideration for the renovation of the ASU. Targeting areas of extended occupancy to implement environmental control elements will be the focus of the design development. Providing patients and staff the ability to adjust lighting, sound, and visual access within micro-environments created throughout the unit may be one way to address the issues of control in the ASU.

Implication of retail design strategies on healthcare design

The increase in the use of retail design typologies in medical environments is directly related to a shift in the perception of healthcare itself. Patients have become consumers, expecting to receive quality service at a reasonable price. Due to the increasing access individuals have to information on a wide variety of subject matter, patients have become informed consumers and are taking an active role in their own healthcare. This emergent paradigm has placed patients in the driver's seat of their health, and has produced a consumer-centered system of care. From an interior design perspective, the effects of this current situation have implications on the designed environments consumer-patients expect of their healthcare setting. Sterile healthcare environments with dehumanizing technology are no longer appropriate. As Solomon states "infection reduction and procedural efficiency were now the controlling factors in health-care design, leading to stark, artificially lit, institutional structures filled with high-tech machinery and organized according to critical

adjacencies" (2004, p.#). Patients, staff, and administrators now expect more. As Elizabeth Rack, principal at HLM points out, "Hospitals want those elements that will distinguish their institutions. We call it the 'wow factor'." Now appearances count, design has finally penetrated one of the last bastions of brutal functionality: institutions once considered too sanitary and serious in their devotion to scientific austerity to be decorated (let alone branded) (Flanagan, 2000).

The implication of retail design on healthcare environments deals with issues surrounding branding, customer retention, as well as, customer satisfaction. As discussed, retail environments are orchestrated to generate an experience, one that entices consumers to linger in the store, with the hope that the greater amount of time invested the higher the likelihood of buying. It is not the intention of healthcare environments to sell more products, but the experience a patient has in the healthcare setting will directly impact their willingness to return in the future. Pearson suggests, in the article *Designing Inclusive Places*, "In a competitive industry, architecture is often seen as an important tool in attracting the best doctors and nurses, the most successful HMOs and insurance plans, and the most patients." (1999). This is especially true in an outpatient setting, where a large percentage of procedures are elective. So designers and administrators are looking to apply the strategies used in retail design to inform healthcare environments.

The question becomes one of application. How to effectively use the information found in the retail typology in a healthcare setting? Branding product and space is common practice in retail environments. In fact the interior design of retail environments can become one to one scaled icons of the brand itself. To create a brand image for healthcare providers, it is necessary for healthcare administrators to identify their corporate mission to generate a marketing strategy. As stated by Johannes Ringel in *New Dimensions in retail design – an expert roundtable*, "Designing a product or the store itself is rather like holding a mirror up

to the consumer. If he sees himself reflected in the mirror – if he sees his lifestyle or what he [sic] wants to be – then he [sic] feels good." By making someone feel good, important, unique, respected, or special, it is likely that his or her response to a product or environment will be positive. The environment is not solely responsible for such feelings; human interactions and preconceived notions also play a major role in shaping individuals' perceptions. Healthcare environments must strive to make people feel positively about their experience, and one component of that mission is to create environments, which foster making people feel good, not just better.

Understanding the complexity of healthcare consumers is important to understanding the implications on the healthcare system and healthcare facility design. A study undertaken by Yankelovich Research, and delivered at Healthcare Forum Summit, in 1998, finds the new consumer has three universal beliefs: doctors can be wrong, people know their own bodies best, and self-reliance is wise. Quality is important, and consumers want the best for less; value is being redefined.

> Patients are realizing, largely due to their personal experiences with managed care – but also influenced by the media – that cost containment pressures and the complexities of the healthcare systems leave them vulnerable to being ignored, being denied treatment, or being exposed to medical error unless they aggressively take responsibility for educating themselves and 'managing' their own healthcare. (Malkin, 2002).

Malkin (2002) also suggests that in order to respond to the changing needs and wants of empowered consumers, healthcare providers will have to provide more choices, control and quality consumer service to patients. Generating branded identities and direct marketing strategies will also be required, as well as, opening access to information. Healthcare has made a transition from institution to service provider, altering its relationship with its users.

Designing a healthcare environment informed by the issues of customer satisfaction would have to consider patients' perception and how the environment

can provide an overall positive experience. There are several design strategies employed by retailers and designers to generate good experiences applicable in a healthcare environment. They include creating positive sensory stimuli, comfortable surroundings, and delight for the consumers. Healthcare environments can be filled with unfamiliar images, unpleasant smells, and a host of strange noises. A design strategy for healthcare environments should address and limit these negative factors while introducing more positive sights, sounds, and smells. How individuals experience an environment is affected by noise levels, temperature, colors, and lighting, as well as how successful those individuals are in manipulating their environment or comfortably positioning themselves within it (Carpman & Grant, 1993).

Increasing comfort and delight can be directly related to the sensory experience of consumers. This implies not just limiting negative factors, but designing elements that surpass the basic satisfaction of consumers, and delivering an experience beyond their expectations. The elements of discovery and delight in healthcare design can take customer satisfaction and escalate it to customer elation. Healthcare facilities informed by the retail design strategies can respond to changing consumer demands, while providing a positive and memorable experience for staff and patients alike.

> Architecture provides a critical link between the patient and the healthcare professional, and the delivery of quality care is often dependent on this relationship. The optimal clinical setting must address and treat not just the medical, but also the emotional, social, and psychological needs of the patient" (Nesmith, 1995, p.11).

The ASU is no exception to the emergent paradigm in the United States healthcare industry. It is faced with staff shortages, increased patient loads, and a constantly increasing need to provide satisfactory customer service. Consumer satisfaction is a current issue in today's literature, and has been dealt with in the ASU. Meeting patients' needs of privacy and control in the environment is likely to

increase consumer satisfaction by making patients feel more comfortable and secure. There are other ways, as well, to generate satisfactory experiences for patients and staff alike, including controlling sensory stimuli, designing pleasant interior vistas and providing visual access to the exterior. However, providing visual, and textural interest with in the unit could offset the negative impacts of uncontrollable sensory stimuli.

The design clearly demonstrates the client's desire to make patient and staff welcome and support, while reinforcing the importance of dignity and respect. A cohesive visual concept has been shown through material selection, application of lighting, and spatial organization. The ASU design has considered material selection, design detailing, and lighting plan as a means of communicating the hospital's core values of dignity and control for all users. It has also taken into consideration how spatial arrangements affect patient and staff perceptions related to privacy, control, comfort, and functional requirements.

Summary of Implications

The practicum has identified numerous design criteria that should be addressed through the design development of the ASU. It includes providing a spectrum of privacy for patients and staff, as well as the availability of environmental control. The design should also aid healthcare providers in achieving customer satisfaction through positive spatial and sensory experiences. These factors (privacy and customer satisfaction) must function within a spatial organization that supports staff effectiveness, positive patient experience, and fit within the larger context of the hospital.

Section 3. Precedent Analysis

Hoag Hospital Breast Care Center

The examination of the newly renovated Hoag Hospital Breast Care and Imaging Center in Newport Beach provides an opportunity to see how issues of lighting effects, materiality as a branding tool, and spatial organization have been handled. The 8,400 square foot project was designed by Taylor and Associate Architects in 2000, and was completed in nine months. The project was a temporary situation to house the breast care component of women's health at Hoag Hospital. The intention of the project was "sought to dispel both physical and psychological difficulties" (Cohen, 2000, p.181) surrounding patient testing and treatment by providing a soothing environment.

Figure 4: Entrance – Hoag Hospital

The facility was temporarily located in the basement of the hospital and had no access to exterior views or daylight. Lighting effects were central to the design development of the unit. Taylor's aim was to "make the patient forget she was in a basement. I wanted to change her entire mindset with a more pleasant space" (Cohen, 2000, p.181). By raising the ceiling around the perimeter of the space, Taylor was able to light the space indirectly, creating a sense of natural daylight from a clerestory or skylight. The impact of daylight, or at least the appearance of it, reconnects patients with the outside world, while providing soft, diffuse lighting effects. "It feels good to be in a room where we can see and understand the boundaries that hold us safely within a space"(Szenasy, 1986, p.47). The lighting in the space takes into consideration

patient perception and addresses the need for a connection to the exterior environment as a means to reducing anxiety and disassociation.

The materiality in the project was chosen to suggest an up-scale spa, rather than an imaging center. "One is struck by the setting's serenity and by the richness of materials"(Cohen, 2000, p.181). The choice to create an environment that identifies itself with a spa, is borrowing a more pleasant typology to increase patient comfort and calmness. The design of the environment, through material selection, generates a specific image intended to increase patient satisfaction. The rich palette of colour and texture creates a feeling of luxury. Material selection and composition is critical and governed by lighting choices. The precedent demonstrates how these two components can come together to create a pleasant spatial experience.

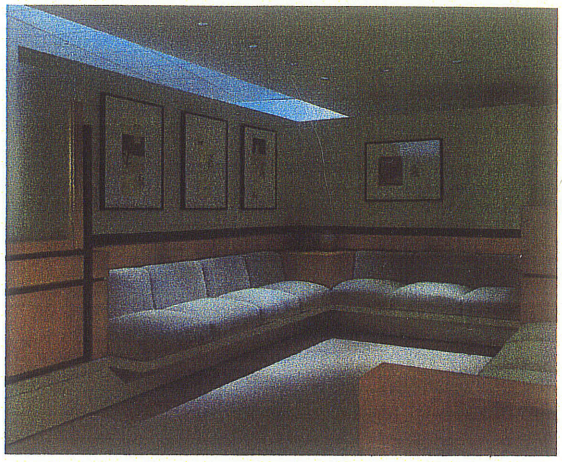


Figure 5: Waiting Area – Hoag Hospital

The reconfiguration of the spatial organization was a critical component in Taylor's design development of the imaging center. Understanding the process of the clinic allowed Taylor to reorganize existing spaces, increase spatial allowances for critical areas (such as changing rooms) and provide needed amenities not previously available. The project exhibits the important role design can have on improving not only the physical surroundings of an environment, but also effecting operational procedure to create better working conditions. Given the opportunity to alter the interior structure of the clinic, Taylor was able to design an environment more responsive to the users' needs by responding to issues of comfort, privacy, and control.

The Hoag Hospital Breast Care Center has informed the design development of Columbia Hospital's ASU in several areas. The project demonstrates the importance of lighting, as a means of reducing patient anxiety and simulating daylight where it may not be possible to access the exterior, through a creative lighting design. Material selection can play an essential role in generating a brand identity, and must be chosen and applied sensitively to communicate appropriate values. Consideration of spatial configuration is important, however, the imaging center demonstrates how creative space planning can provide an opportunity to increase the space provided to essential services while finding room for new programmatic elements. The scale and ambulatory nature of the Hoag Hospital Breast Center makes it a relevant precedent for the practicum.

Figure 6: Dressing rooms – Hoag Hospital

CORE AIDS Center

Figure 7: Exterior Entrance – CORE AIDS Center

The freestanding AIDS center, know as the CORE building, designed by Perkins & Will in Chicago has been published as an innovative project, "may not represent an altogether new building type but a new subspecies." The revolutionary approach to design makes the CORE Center an ideal precedent to examine. Built in 1994, the CORE center is still considered today as an excellent example of design positively affecting patient perceptions. The 60,000 square foot, four story building has been designed with patients' needs and experience as the guiding principal. "CORE Center strikes a balance between instuitional and domestic scales. (Kent, 1999, P.142) The equibruim Perkins and Wills found is important to the practicum, because it has used the residential model in the design development of the space. Sensitivity to user group and their needs are demonstrated throughout the design. The primary users of CORE are HIV and AIDS infected patients. CORE provides testing, and treatment for the disease, as well as medical research related to the illness.

> The building is organized into several zones to provide specialized services and to respect the feelings of patients as much as possible. For example, the most intensive treatments, including intravenous infusions and minor surgeries, are performed on the top floor. Secluding these patients – who are very ill or in the final stages of AIDS – shields those who are less ill from a depressing vision of the ultimate course of this physically ravaging disease. (Kent, 1999, P.144)

Understanding the function and activities of the space in relation to patient needs and sensitivities is a powerful factor in the design of the CORE Center.

Access to daylight and views of the exterior are powerful statements of the design. The fourth floor area, as seen in the picture to the left, is washed by the light from the two-story fenestration and animated by views of the surrounding area. Daylight is an important element throughout the project, helping to compensate for loss of vision experienced by patients whose sight has been impaired by AIDS.

Figure 8: Treatment Area – CORE AIDS Center

The CORE Center's attention to patients' needs and sensitivities can be used to inform the design development of the ASU.

Understanding the needs of the user groups functioning within the space can have serious implications on the way the space is articulated. The project also provides an opportunity to examine how residential scale can be applied to a healthcare environment, while still maintaining the security of an institutional design vocabulary.

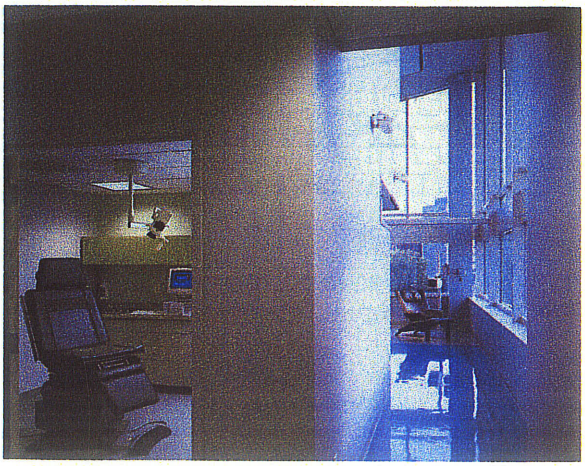


Figure 9: Corridor – CORE AIDS Center

Section 4. Program

Introduction

Framework

The program document has been organized to provide a summary of existing conditions of the site, and a brief overview of Ambulatory Services Unit's (ASU) organizational structure and requirements. The majority of the document interprets and considers how the information uncovered in the literature review and precedent analysis may inform the design development of the Ambulatory Services Unit (ASU).

The document has been developed on the programming framework outlined by Robert Kumlin in *Architectural Programming: Creative Techniques for Design Professionals*.

Client Profile and Mission

Mission Statement and Values -Columbia Hospital

Mission Statement:	The mission of Columbia Hospital is to be the provider of quality, compassionate, cost-effective health care responsive to the needs of our patients, physicians, and community.
Values:	Respect, Service, Excellence, Pride, and Team Work.
Motto:	Columbia Hospital – Your Gateway to Health

Mission Statement and Values - Hospital Corporation of America (HCA)

Mission Statement:	Above all else, we are committed to the care and improvement of human life. In recognition of this commitment, we strive to deliver high quality, cost effective healthcare in the communities we serve.
Values:	In pursuit of our mission, we believe the following value statements are essential and timeless. We recognize and affirm the unique and intrinsic worth of each individual. We treat all those we serve with compassion and kindness We act with absolute honesty, integrity, and fairness in the way we conduct our business and the way we live our lives. We treat our colleagues as valuable members of our healthcare team and pledge to treat on another with loyalty, respect, and dignity.
History:	In February 1994, HCA merged with Columbia, which had acquired Galen Healthcare (formerly Humana) in September 1993. HCA's headquarters are located in Nashville, Tennessee. HCA is composed of locally managed facilities including approximately 191 hospitals and 82 outpatient surgery

centers in 23 states in the United States, England, and Switzerland.

The corporation had revenues totaling $21 billion in 2003. Jack O. Bovender Jr. leads the Corporation, in his position of Chairman of the Board and CEO, along with President and COO, Richard M. Bracken. HCA and its affiliates employ approximately 190,000 people.

HCA's Business Strategy:

Putting Patients First: HCA works to constantly improve the care we give our patients, implementing measures that support our caregivers, help **ensure patients safety** and provide the highest possible quality.

Investing in our Communities: **HCA presently plans to invest more than a billion dollars per year to keep our hospitals modern** and up-to-date technologically. We will also expand and add services to our hospitals and selectively acquire new facilities in order to better serve our communities.

Focusing on Leading Hospitals in Care Communities: HCA focuses on communities where the company is a leading healthcare provider.

Improving Local Operations through Efficient Use of Resources: HCA employs industry-leading measures that **enhance the performance of the company's local facilities**, including organized group purchasing, efficient supply acquisition and distribution, shared administration and business services, and other initiatives that allow our hospitals and their communities to benefit form economics of scale.

Building Strong Physicians Relationships: HCA values strong relationships with local physicians, working to provide them a wide array of services and **modern facilities in order to help them deliver the best possible care.**

Four out of the five business strategies outlined by HCA, directly suggest the importance of the physical environment in being an efficient business and healthcare provider.

Priority Statements

The following priority statements are the primary concern for designing the ASU at Columbia Hospital.

1. ***Interaction and Privacy***. The design should consider the privacy and interaction of all users, and how the interior design can facilitate appropriate amount of privacy regarding occupant, use, and time considerations.

2. ***Comfort***. The design should provide a comfortable environment for all users, through spatial articulation, furnishings, material selection, and color application.

3. ***Visual Concept***. The design should create a relaxing, interior environment where patients feel control, comfort, and dignity.

4. ***Delivery of Care.*** The design should support the delivery of quality care in an effective and responsive manner.

Organizational Structure

Overview of Organizational Hierarchy

The Ambulatory Services Unit is a day medicine and day surgery unit, which is responsible for admitting, preparing, recovering, and discharging patients requiring medical treatment. It includes four component specialty areas:

- Day surgery
- Endoscopy
- Pain Clinic
- Radiology

The following program however will only address the day surgery component only.

The organizational chart (p.53) demonstrates how the surgical suit is staffed and where Ambulatory Services Unit is situated within. There are three management groups within the unit:

- Nursing
- Anesthesiology
- Surgery

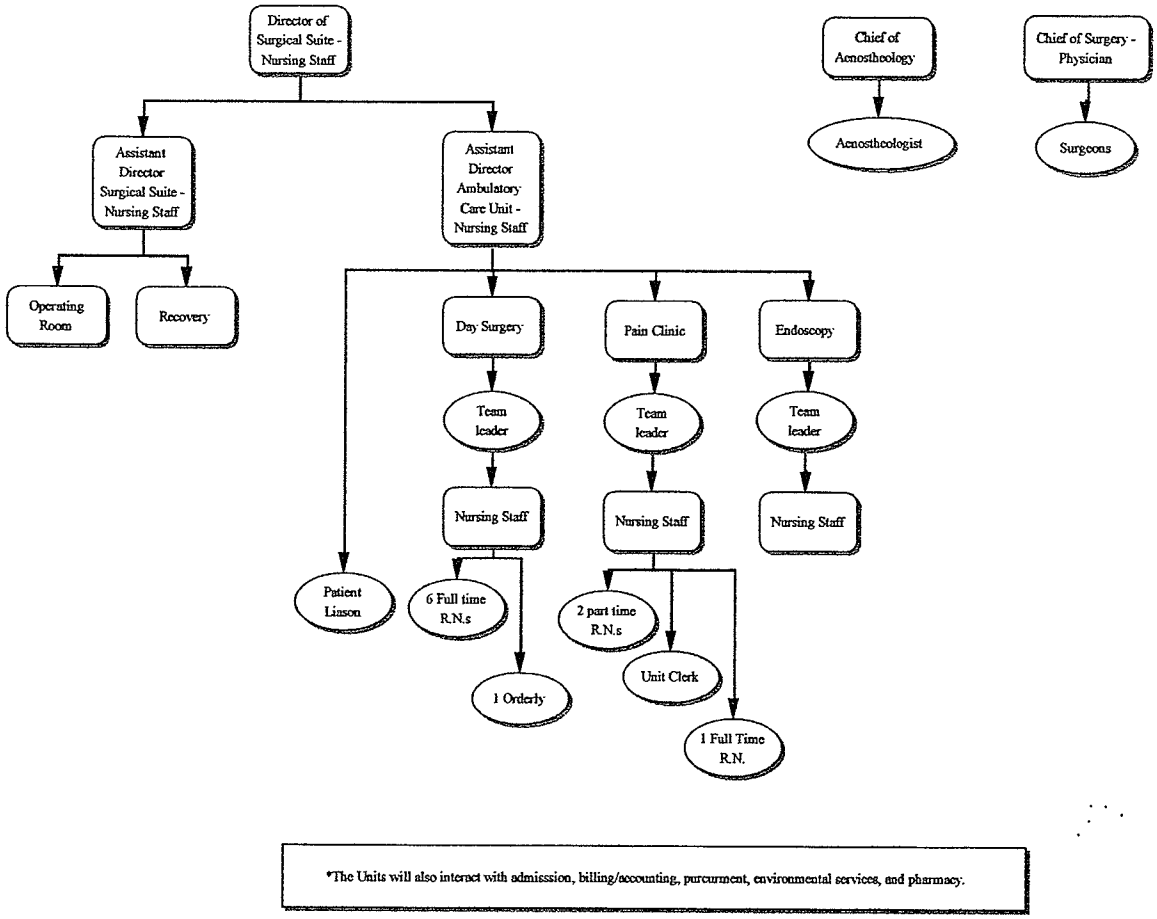


Figure 10. Columbia Hospital's Surgical Suite Organizational Diagram

Scope of Services

The ASU performs the following tasks:

- Pre-operative preparation
- Post-operative recovery
- Patient Discharge

The ASU is responsible for the following services:

- Surgical procedures
- Blood transfusions
- Administering drug treatments
- Bone marrow biopsy
- Anti biotic infusions
- Radiology procedure preparation
- Prepare Electro Convulsive Therapy (ECT) patients for treatment

Hours of Operation	
Admitting	Monday - Friday: 0600 to 2000 hours
ASU: General Hours	Monday - Friday: 0530 to 2000 hours
Pre-Op	Monday - Friday: 0600 to 1500 hours
Recovery	Monday - Friday: 0800 to 2000 hours

Table 1: Operational Information

Note:

- Admitting is open until 2000 hours, but patients to the ASU will likely only be admitted until approximately 1600 hours.
- The general hours for the ASU are based on staffing schedules, however depending on patient load and recovery time the area maybe occupied later than 2000 hours.

Historical Workload			
	2004 (annual)	2004(1st quarter)	2005(1st quarter)
Patient Volume			
# Nursing staff		6	8
# Patients Admitted	4171	1091	1067
Urgency of Surgical Procedure			
Elective	100%	100%	100%
Patient Admission			
Discharge ASU	3362	890	876
Admitted in Hospital	809	201	191

Table 2: Workload

Note:

- Despite the small decline in the number of patients admitted to the unit in the first quarter of 2005, ambulatory care is increasing significantly as a delivery system of care in the United States.

3.1 Coverage

Days*		Evenings**	
Classification	Coverage	Classification	Coverage
Manager	1 (6:30 – 3:00)	Manager	N/A
Charge RN	1 (6:00 – 2:30)	Charge RN	N/A
RN	4 –5	RN	2
Patient Liaison	1 (6:00 – 2:30)	Patient Liaison	N/A
Orderly		Orderly	

Table 3: Staffing

* Day shift is from 0600 to 1630hours

** Evening shift is from 1000 to 2030 hours

- RNs works 10 hours shifts, 4 days a week with a ½ hour lunch break.
- Ambulatory Services Nursing Supervisor, Charge RN, and Patient Liaison works 5 days a week, 8 hour shifts.
- Monday, Wednesday, and Friday – 5 RNs on day shift and 2 working evening shift
- Tuesday, Thursday – 4 RNS on day shift and 2 evening shift
- The increased staff on Monday, Wednesday, and Friday is to handle larger workload due to the reoccurring treatment of Electro Convulsive Therapy patients.

Human Factors

Patients

Profile: Demographic information is not available for the patient users of the ASU. However by looking at the larger U.S. context it can be speculated that the unit will have to deal with an increasing number of senior users. As the baby boom generation ages they will place an increasing demand on the U.S. healthcare system, including ambulatory services. There is also limited information on the socio-economic profile of users, as they are from a range of groups. There is also no clear ethnic or racial majority. The practicum speculates however, that the majority of users fall within the median range of the metro region of West Palm Beach, Florida, despite the fact the hospital is located in a low-income community.

Profile 1: A patient, who has recently undergone a mastectomy to remove a cancerous tumor, has returned to undergo reconstructive breast surgery.

Profile 2: A patient receiving ECT treatments for depression. Requires treatment once a week.

Profile 3: A patient is admitted for the removal of skin melanoma.

Activities: Patients have various needs as they transition through the areas of the ASU. Patients need to feel secure and comfortable. Ability for patients to mediate their level of visual and acoustical privacy is required. The medical procedure a patient is receiving will impact their experience.

The standard patient experience is as follows:

- Arrive at hospital, entering through the front door
- Go to admitting to be registered
- Directed to Outpatient waiting area
- Patient Liaison acquires patient information about who will be taking them home, verifies admission paperwork, and proofs correctness of information
- Wait until nurse calls from for patient
- Enter locker room
- Introduction to Nurse waiting in locker room with directions
- Change into gown and place belongings into locker
- Placed on stretcher
- Vital signs are taken, along with patient's history and assessment
- An IV is started and blood is drawn for the necessary lab tests
- Wait for surgery – Family can visit during the wait (only 2 at a time)
- Anesthetist visits patient to review procedure and introduce themselves
- Operating Room staff comes and transfers the patient to an O.R. stretcher and takes the patient away

- Patient returns to the ASU after procedure is complete and they have been stabilized in PACU or the O.R.
- Met by a nurse who takes vital signs and does a pain assessment
- Patient is given something to drink when they are ready
- When the patient is ready they are taken to the restroom
- Once the patient is recovered (a minimum of one hour) they are moved to the recovery lounge where their IV is removed and they can get dressed
- Discharge instructions are given to the patient and family, who have joined the patient in the recovery lounge
- Patient is escorted to their car, by wheelchair, to be taken home

Expectations: Each patient has specific expectations for their experience in the ASU, however, cleanliness, compassion, and competence are general concerns for most patients.

Nursing Staff

Profile:The nursing staff is comprised of mostly females, ranging in age from 30 to 55 years old. Their professional backgrounds range from acute care nursing to care providers on general inpatient floors. They are all Registered Nurses and licensed by the Florida Association of Nurses, working 4 days a week, 10 hours a day.

Activities: Admission Procedure and Care of the Patient Pre-Procedure

- Review chart for completeness. Obtain History and Physical, missing laboratory result, EKG, chest x-ray, or any other ordered tests
- Check operative contest for completeness
- Sign off Physicians orders and anesthesia orders
- Introduce self to patient. All belongings for AM admission patients are placed in hospital belongings bag. All outpatients will have belongings placed in locker. All valuables are given to family or locked in safe
- Armband placed on patient and name and birth date is verified
- Outpatient or Admission History and Assessment completed, verified, printed and put on chart
- Intravenous or MAP started with ordered fluids
- OR Module completed
- Operating Room front desk notified of any missing History and Physical or need for attestation form
- Anesthesiologist or patients physician notified of any abnormal pre-op tests or any questions regarding patient pending surgery
- Family allowed visiting patient in ASU department prior to procedure

Care of Patient Post-Operative or Post-Procedure

- Accept report on the patient from the Operating Room, PACU, Endoscopy or X-ray department nurse
- Accesses the ASU recovery assessment from the Day Surgery/PACU menu
- Initial assessment is completed; vital signs are recorded per physician order or q15 minutes X2, q30min X2, q1 hour X2, then q4 hours until patient is discharged. Any abnormal course with each set of vital signs and with 30 minutes of any pain relief measures
- Pain level assessed with each set of vital signs and within 30 minutes of any pain relief measures
- Patient's diet is advanced as tolerated
- Discharged criteria is met before patient is discharged or reason why is documented
- Discharge instructions reviewed with patient and family. White copy is given to the patient. All prescriptions and drug monographs are explained to patient and family
- Patient is escorted to discharge area and assisted to car
- ASU recovery assessment printed and placed on chart. All orders signed off. Patient is charged for recovery time. Chart is placed on desk with History and Physical and Advanced Directive on top

Opening Department:

- The assigned nurse will pick up the keys in locked anesthesia/operating room IV room
- Unlock doors in department including:
    - Cupboards in recovery lounge
    - Cupboards in outpatient department
    - Refrigerator in recovery lounge and record refrigerator and freezer temperatures.
    - Refrigerator in outpatient department and record refrigerator and freezer temperatures.
- Count narcotics
- Check crash cart
- Open Managers office
    - Perform controls on Accucheck machine
    - Stock lab tube tray
- Check standard precaution stock
- Check laboratory reports on printer
- Set out charts for early admissions
- Place clothes hamper in dressing room
- Check stretchers, any dirty stretchers are cleaned
- Obtain enough pillows for day
- Set phone by sign in sheet in waiting room so patients can see it

Closing Department:

- Clean recovery lounge-clean and shut off coffee pot, lock all cabinets and refrigerator, lock door to recovery lounge.

- Clean dressing room – bring hamper out to outpatient area, clean dressing room seats with disinfectant, place prepared gowns in gown locker, make sure all lockers are empty and locked.
- Count narcotics
- Check all medication sheets, make sure they have been charged to our department and take sheets to pharmacy, order and pick up all antibiotics from pharmacy or other medications not in stock in department
- Lock up all medications and narcotic cabinet, lock up refrigerator
- Put paper in printer and fax machine
- Clean all stretchers and make up stretchers for next day
- Clean lounge room
- Clean dirty utility room
- Make sure department is neat and all charts are ready for next day
- Check that all IV pumps, pulse oximeter, and crash cart are plugged in and charging.
- Check the thermometers are in chargers.
- Turn off all lights, lock doors, and take keys to locked anesthesia/operating room/IV room.
- Check Operating Room schedule. Make sure times are right.
- Make sure phone calls are done.

Expectations: To have a clean, safe environment in which to work, where they are treated with respect and dignity. The physical environment can play a role by facilitating the functional activities and providing a pleasant work environment.

Visitors

Profile: Visitors are the people who accompany patients to the hospital, wait with them prior to surgery, visit with them after their procedure and take them home after they are discharged. Visitors can range from family to assisted living aids. Visitors can experience anxiety while waiting for patients undergo their treatments.

Activities: Waiting and Visiting. Visitors generally spend the majority of their time waiting or visiting with the patient. They often use auxiliary services and spaces as they wait, including the cafeteria, exterior seating areas, and waiting areas.

Expectations: Visitors expect that there will a comfortable place to wait where they are out of general traffic flow. They also expect to have a comfortable place to sit and wait with patients before and after their procedures. Access to televisions, music, magazines, and toys for children could increase visitors' levels of satisfaction. The environment should be comfortable and clean while providing diversions.

Surgeons

Profile: Surgeons are specialized physicians, who have obtained admitting and operating rights at Columbia Hospital. Patients have usually met with the surgeon prior to surgery for examination and assessment. The number of surgeons operating in a day normally ranges from five to ten. Attracting and retaining the highest quality physicians is important to hospital administrators because surgeons bring patients into the hospital for treatment.

Activities:

- Admission Procedure and Care of the Patient Pre-Procedure
- Approximately 50 % of surgeons visit the patient prior to surgery in the ASU.
- Approximately 30 % of surgeons visit the patient post procedure in the ASU.
- The Surgeon sees all in the PACU after the procedure.
- After the procedure is complete the surgeon will meet with the family of the patient to let them know the outcome of the procedure, each encounter taking approx. 5-10 minutes.

Expectations: Surgeons like patients are valuable clients to the hospital and therefore expect to be treated as such. Hospitals offer physicians, private lounges, dinning areas, and premier parking. Their expectations are that hospital staff are trained and caring. The quality of healthcare facility is also important because physicians want to treat their patients in a quality environment.

Anesthetist

Profile: Anesthetists are the doctors responsible for patients' well being while in surgery. There are currently 3 Anesthetists and 5 Nurse Anesthetists practicing at Columbia Hospital.

Activities: Admission Procedure and Care of the Patient Pre-Procedure

- Anesthetist must see every patient before the procedure. This interview may take place in Pre-Admission Testing (PAT) or at the bedside in ASU.
- The interview generally takes 10 minutes to complete.
- The Anesthetist is contacted about any abnormalities with the patient during their stay in the ASU.

Expectations: Anesthetist expectations are similar to that of surgeons.

Site and Existing Building Analysis

Climate Context

West Palm Beach, Florida is on the Eastern Seaboard of the United States. Due to its latitude location, West Palm Beach experiences tropic and sub-tropic temperatures. As demonstrated in the chart below, temperatures stay well above freezing throughout the year. Due to it's location, West Palm Beach can be hit by tropical storms and hurricanes. This weather calls for specific building requirements, such as shatterproof fenestration, uninterrupted power supply (UPS), and structures engineered to withstand category three winds of a hurricane.

Climatic Information								
	Avg. High	Avg. Low	Mean	Avg. Precipitation	Record High	Record Low	Wind Direction	Daylight/ Hours
January	75°F	57°F	66°F	3.75 in	87°F (1991)	27°F (1977)	NW	10.25
February	76°F	58°F	67°F	2.55 in	90°F (1949)	32°F (1989)	NW	11.25
March	79°F	62°F	71°F	3.68 in	94°F (1977)	30°F (1980)	SE	12
April	82°F	65°F	74°F	3.57 in	99°F (1971)	43°F (1987)	SE	12.75
May	86°F	70°F	78°F	5.39 in	96°F (1971)	51°F (1992)	E	13.25
June	89°F	74°F	81°F	7.58 in	98°F (1998)	61°F (1984)	E	13.75
July	90°F	75°F	83°F	5.97 in	99°F (1983)	68°F (1975)	E	13.25
August	90°F	75°F	83°F	6.65 in	98°F (1963)	66°F (1950)	E	12.75
September	89°F	75°F	82°F	8.10 in	96°F (1951)	67°F (1983)	E	12
October	85°F	71°F	78°F	5.46 in	95°F (1959)	46°F (1968)	NE	11.25
November	80°F	66°F	73°F	5.55 in	91°F (1992)	36°F (1950)	E	10.25
December	76°F	60°F	68°F	3.14 in	88°F (1989)	28°F (1989)	NW	10

Table 4: Climatic Information

Social Context

Demographic Information of Surrounding Community

The information provided below is taken from the United States Census. The hospital's neighborhood has a relatively high crime rate both to person and property. The average income is also lower than city, state, and national averages. The community's population is younger than the city's average, by eight years. The neighborhood appears, from the statistical information, to be a young, low income, high crime community.

Demographic Information				
	Zip 33407*	Metro Area	State Avg.	National Avg.
Demographics				
Population	28,973	1,096,802	17,019,068	290,809,777
Pop. Density	2,924.0	2,450.8	296.4	79.6
% Male	49.6	48.6	48.7	49.1
% Female	50.4	51.4	51.3	50.9
Median age	34.2	42.2	39.5	36.5
People/household	2.6	2.4	2.5	2.6
Median household income	$32,169	$53,088	$38,819	$41,994
Average income per capita	$16,483	$32,169	$21,557	$21,587
Crime				
Violent crime risk index	8.0	4.5	4.9	3.0
Property crime risk index	8.0	5.1	4.5	3.2
Housing				
Median home value	$135,094	$178,200	$121,800	$170,800
Median age of homes	34.2	13.7	14.5	27.8
Homes - owned	46.9%	60.0%	60.8%	63.4%
Homes - rented	41.4%	22.2%	26.0%	21.7%
Homes - vacant	11.7%	17.8%	13.2%	14.8%
Family Facts				
Currently married	41.7%	56.4%	54.3%	58.3%
Never married	31.5%	21.9%	23.8%	23.8%
Divorced	11.8%	9.4%	11.6%	7.7%
Widowed	9.1%	9.3%	7.9%	7.4%
Separated	5.9%	3.0%	2.4%	2.8%
Married - w/children	16.5%	19.0%	28.9%	28.5%
Married - no children	20.5%	34.9%	47.0%	31.3%
Single - w/children	16.5%	9.5%	13.4%	9.3%
Single - no children	46.5%	36.7%	10.8%	30.7%

Table 5: Demographic information

*For the purpose of defining the neighborhood, the practicum has identified the zip code of 33407 as the community in which the hospital resides.

Existing Facility Analysis

Exterior Analysis

Columbia Hospital is located in the city of West Palm Beach, Florida.

Located in the Mongolia neighborhood, Columbia Hospital is situated in the city at the corner of 45th St. and Congress Ave. The hospital is built in close proximity to the Interstate 95, a major highway that runs along the East coast of the United States.

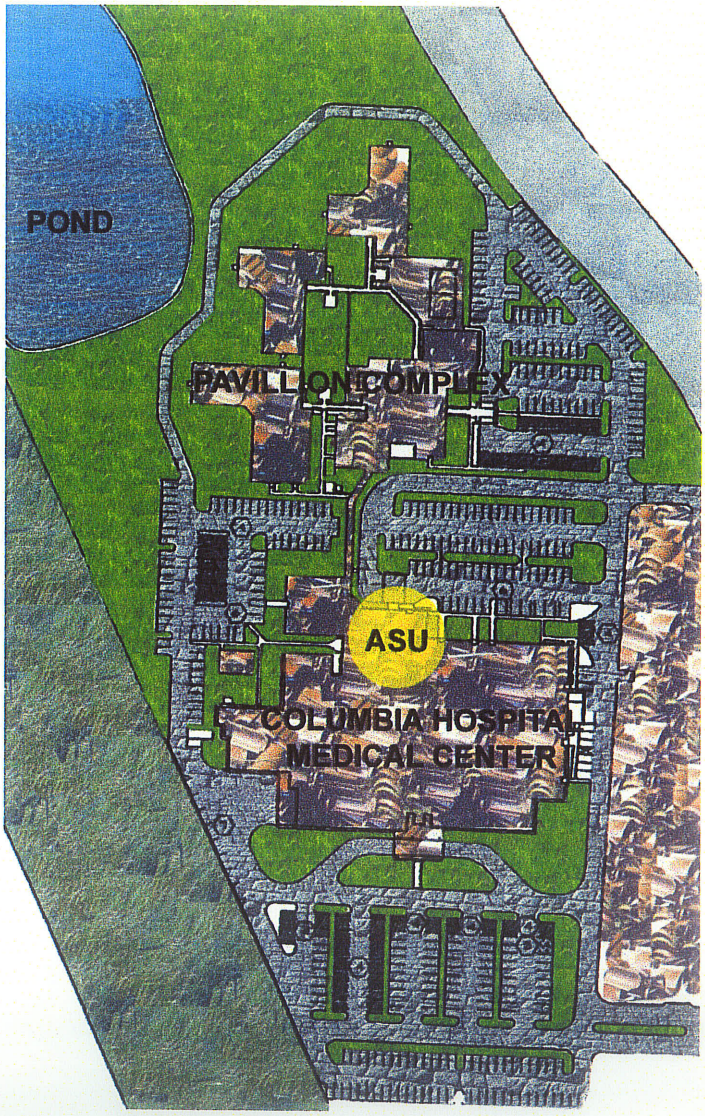


Figure 11. Columbia Existing Site Plan

Landscape Character

The landscape character of the site is open with some vegetation planted around the hospital. There is water on the west side of the facility consisting of a retention pond and canal. The majority of the site is used for parking. There is vegetation planted in the curbed areas of the parking lot.

Orientation of Elements

The main entrance of Columbia Hospital is orientated south, while the ASU is on the north side of the building. The north side receives direct sunlight in the early morning from the east, and then indirect light for the rest of the day. The shade provided by the building will limit heat gain and visual glare. Artificial light will be necessary to supplement the natural daylight.

Opportunities and constraints of the site:

Opportunities	Constraints
There is adjacent space North of the ASU for further development and/or addition	Further development could limit the amount of natural daylight and exterior views available deeper in the ASU
A strong presence could be conveyed from the exterior of the Hospital to identify the location of the ASU	The views from the ASU will be of the parking area
Provide a covered pick up and drop off area for patients and visitors of the ASU	There is no room for expansion in the ASU's current location within the hospital without building an addition

Table 6: Opportunities and constraints of the site

Existing Interior Context

The unit is situated on the North side and main floor of the hospital. The operating rooms and PACU surround the unit on three sides. Other units located on the main floor include ICU/CCU, physical plant, dietary, business offices, radiology, emergency, admissions, and physical therapy.

The highlighted area on the drawing indicates the location of the unit in relation to the first floor footprint. The line indicates the main circulation path from the front of the hospital to the unit.

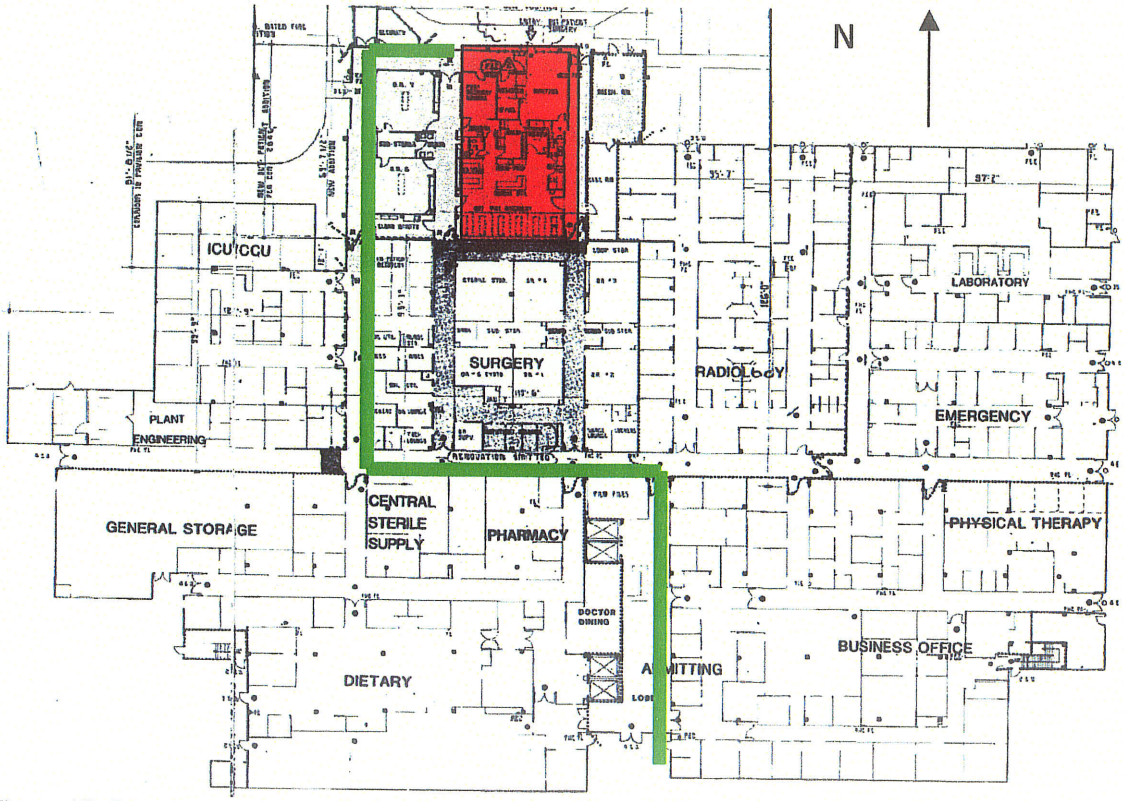


Figure 15: Interior First Floor Plan of Columbia Hospital

The unit is currently 3800 square feet, housing eight distinctive areas. The floor plan (p.67) illustrates current spatial adjacencies and indicates patient flow. Modifications have been made to the unit since it was first built. The current Nursing Manager's office was designed as an isolation room, the recovery lounge was been made larger by removing the manager's original office and admissions desk, and the clean utility room also functions as the staff lunch room.

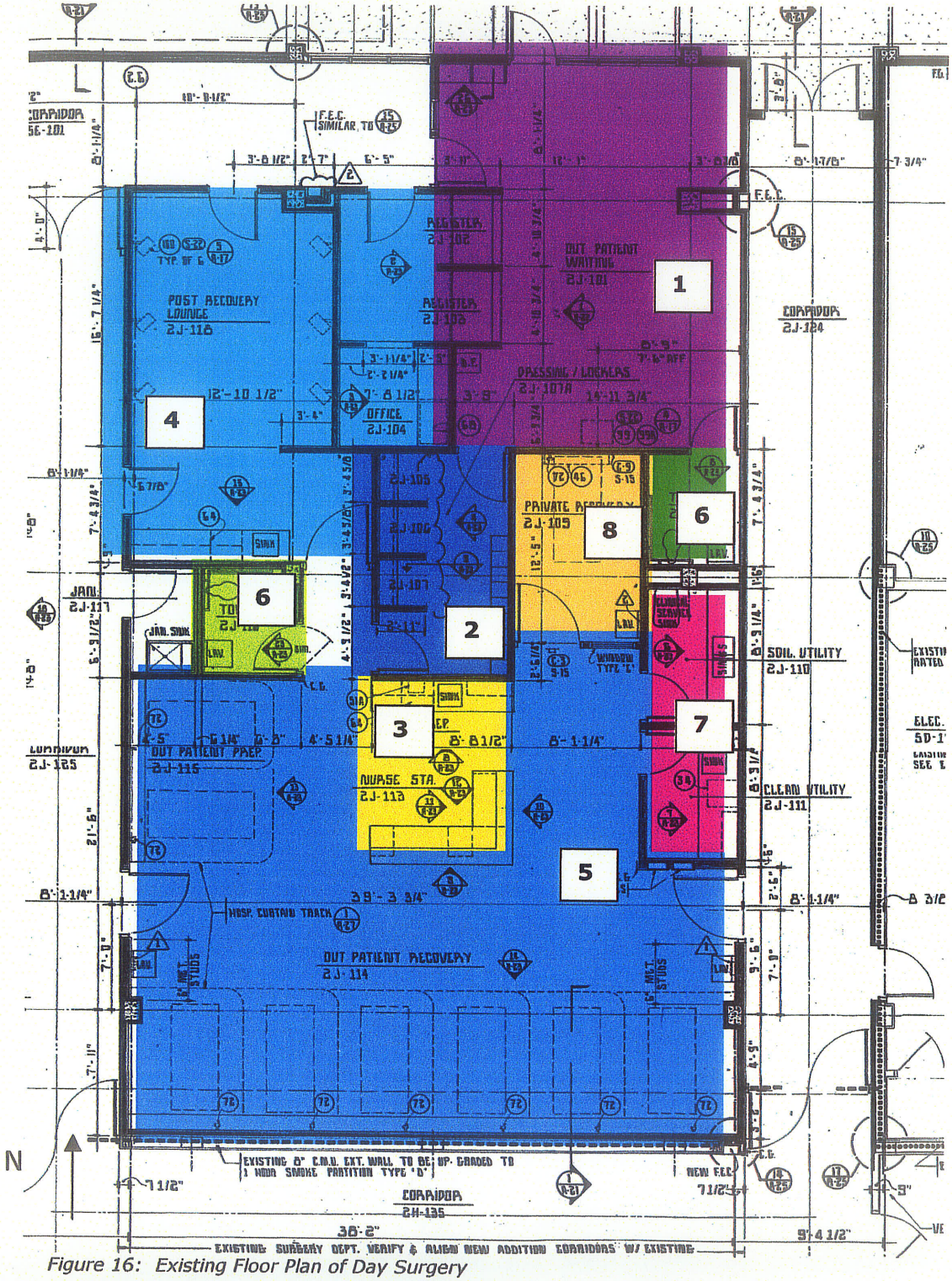


Figure 16: Existing Floor Plan of Day Surgery

1. Waiting Area
2. Change Area
3. Unit Desk
4. Recovery Lounge
5. Pre and Post Procedural Area
6. Washrooms
7. Utility Rooms
8. Manager's office/Storage

Existing Building Analysis

Opportunities and Constraints of Existing Interior Context

Opportunities	Constraints
Interior corridors on the perimeter of the unit can be utilized for access any additional spaces required	Limited access to natural day lighting
There is a possibility to build on addition to add needed space	There is no possibility to expand the width of the unit
	The interior structural elements may limit spatial configuration

Table 7: Opportunities and constraints of existing interior context

Egress

The unit can be accessed from the exterior as well as from the interior corridors in the hospital.

a. View of the interior and exterior entrance from the waiting area
b. View of the interior entrance from the hospital corridor
c. View of entrance to the change area from the waiting area
d. View of the exterior doorway from the waiting area

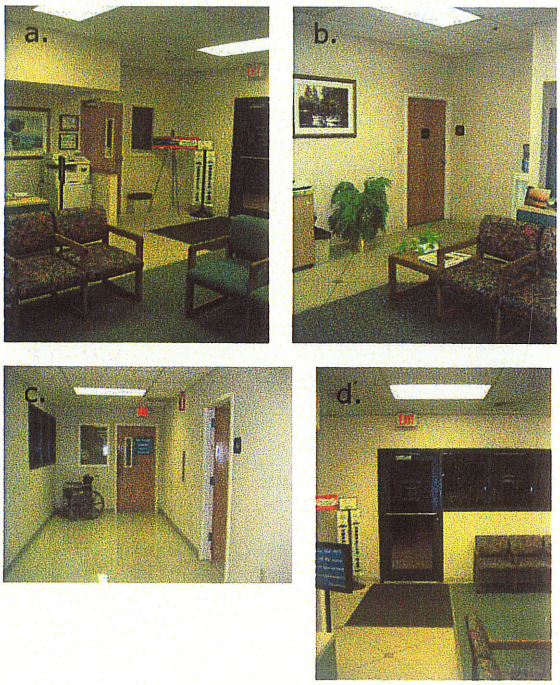


Figure 17: Egress

Analysis

The egress in this area is very confusing, which likely causes people to feel uncertainty, heightening their sense of anxiety. The entrance into an environment can have a lot to say about what an individual can expect through out the environment. In this case, it demonstrates mixed messages and unclear expectations.

- All access points are non-automated
- All access points are single doors
- Access to unit is hidden from view when arriving. This can raise anxiety of patients and visitors
- Poor way finding because unrestricted access is mixed with restricted and visually they are the same.
- Solid doors create a sense of anxiety
- No covered entrance from the exterior of the building
- Isolated from the rest of the hospital
- Limited visual access to the exterior

Waiting Area

The Waiting Area is where patients and visitors come after being admitted to wait for their procedure. A patient liaison works in this area to register patients, communicate with nursing staff, and inform visitors of patients' status.

a. View of the waiting area from the interior entrance. Visitor washroom is behind the closed door in center of image

b. View from reception desk in the waiting area

c. View of the reception desk

d. View of waiting area from exterior entrance

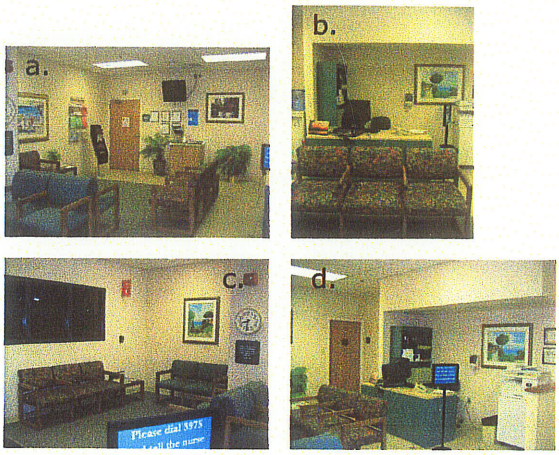


Figure 18: Waiting Area

Analysis

Row seating is provided and can limit interaction. The area is small and plain and provides no visual interest for people waiting. It is not programmed for different activities, which might allow people to play cards at a table, or sit in a comfortable chair to read. The space is unfriendly, sterile, and non-welcoming.

- Uniformed light levels create an institutional feel
- Seating formation limits privacy and compromises confidentiality
- Creates a sense of isolation for visitors and patients as they wait throughout the day
- Reception area provides no privacy for patient liaison to communicate with incoming patients
- Spatial articulation provides little to no definition between entrance, exit, reception, and the waiting area

Change Area

Patients are brought into this area from the waiting area, to change out of their clothing into patient gowns. This is the transition area for a patient from individual to patient. Items are locked in the lockers provided.

a. View of the change stalls and the door leading from the waiting area

b. View of a singular change stall

c. View of the locked storage in the change area. There is also a linen hamper provided for used gowns

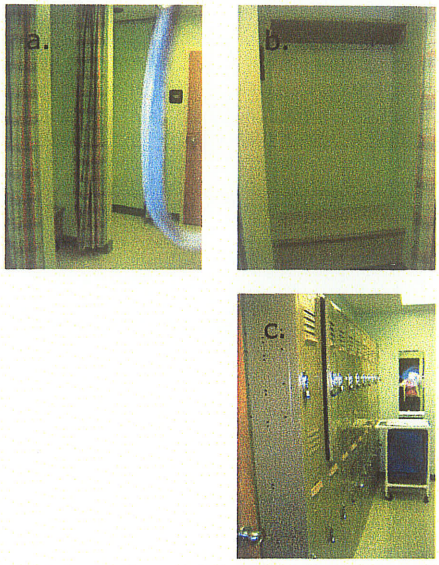


Figure 19: Change Area

Analysis

- Little to no room for physically impaired people to change
- The overhead fluorescent lighting is terrible...it makes healthy people look sick
- There is nothing comfortable about this area
- No recognition of the transition for patient
- It creates an extreme sense of isolation because of the closed doors on either side, but it lacks privacy because there is no control over who comes in
- Secure storage are typical gym lockers

Pre and Post Operative Area

The pre and post procedure areas are the largest in the unit. There currently are 8 patient centers. Visual privacy is provided by wrap around curtains. There is no acoustical privacy.

a. View looking east in the pre and post procedure area

b. View looking north in at the unit desk from a patient center

c. View looking west at the patient centers

d. View from unit desk at patient centers

Figure 20: Pre and Post Operative Area

Analysis

- Pre and Post Operative areas are currently located with the same space
- There is only one washroom for the entire unit
- No privacy – visual, acoustical, or olfactory
- Uniformed institutional lighting makes the space very flat and unpleasant
- Patients have no control over their personal environments
- Televisions are provided in each bay for patients
- Nursing staff has total access to the whole area from the adjacent nursing station

Unit Desk

The Unit Desk is the hub of the unit. RNs and Physicians use this area to complete documentation, dictate personal histories by phone, and communicate with other departments, including the OR and PACU.

a. View from change room entrance of the unit station

b. View of the unit desk from the Manager's office

c. View of the back wall of the Unit desk

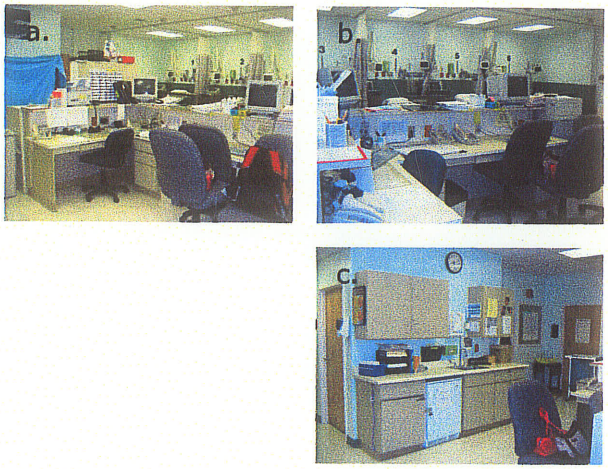


Figure 21: Unit Desk

Analysis

- The number of workstations is currently inadequate for the number of staff using the area causing congestion behind the nursing station and efficiency of staffs time
- There is little visual privacy, and no acoustical privacy from patients and visitors in the unit
- Inappropriate storage units for items being stored
- Storage is difficult to access
- The area behind the desk is inadequate for the volume of circulation and can become congested
- No area to stand and write reports or do paperwork
- The area is exposed to the rest of the unit
- Personal histories are entered via telephone from this area which violates the personal privacy of the patient being discussed

Recovery Area

The recovery area is where patients are discharged from the unit. Patients receiving blood transfusions and pain treatment may also occupy this area. The primary access to the unit is through the recovery area. All staff and visitors use the circulation in this area. It offers very little privacy, no views to the exterior environment, and is separated from the rest of the unit. The unit station has no visual access to this area.

a. View of entrance from hospital corridor to recovery lounge

b. View of recovery lounge from entrance to the rest of the unit

c. View of the SW corner of the recovery area

Figure 22: Recovery Area

Analysis

- This area is rarely used because of its isolation from the rest of the unit
- Patients are generally recovered and given care instructions in the post operative area
- The main circulation path divides the recovery area, the only egress into the unit cuts directly through the space eliminating any privacy
- This space is generally used for administration of pain management, blood transfusions and other pharmaceutical treatments

Staff Area/Clean Utility

This area is designated as the clean utility area, however with lack of a staff area, staff uses this space as a lunch and break room.

a. View of the staff area

b. View from the unit of the clean utility/staff room

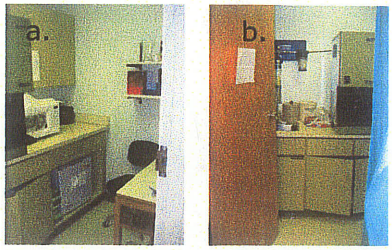


Figure 23: Staff Area/Clean Utility

Analysis

- The majority of storage units in this area is under utilized
- The space is not sufficient for a staff break area
- Poor lighting
- Poor ventilation
- Lack of seating
- Compromised infection control for clean supplies because of dual use

Washrooms

There are two washrooms located within the unit. One in the waiting area for the use of patients and visitors, and one located within the unit for use by patients and staff.

a. View of the W/C in the unit

b. View of the waiting area W/C

Figure 24: Washrooms

Analysis

- Not enough washrooms in the main area of the unit
- No private washroom for staff

Assistant Director's Area

The Assistant Director of Nursing of Ambulatory Services (ADNAS) has an office in the unit. The position requires the ability to have private conversations, secure storage, computer terminal, and telephone.

a. View in the ADNAS's office from the unit. The area was designed to be a quarantine area

Figure 25: Ass't Director's Office

Analysis

- The space was originally designed as an isolation area. It now also accommodates the assistant director's office and storage
- No privacy for people entering and exiting the office
- Inadequate space for the desk and seating for an additional person
- Poor ergonomics for performing required tasks

Beverage Prep Area

Patients can receive a beverage as part of the recovery process. Visitors are also offered coffee or juice. There is no food prep area in the unit. If food is required it is delivered from Food Services.

a. View of the beverage prep and storage area, which is currently located in the recovery area of the unit

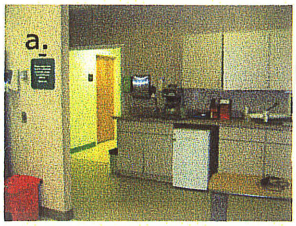


Figure 26: Beverage Prep Area

Analysis

- Storage is under utilized
- The space does not require the amount of counter space provided
- The area is isolated from the rest of the unit
- The area is not close to the people who are using it

Spatial Analysis

Spatial Requirements

The following chart outlines the required spaces in the ASU, and the estimated spatial requirements for each.

Spatial Requirements						
	Existing			Proposed		
Activity Areas	# of units	sqft/unit	total sqft	# of units	sqft/unit	total sqft
Entrance	1	64	64	1	260	260
Reception	1	80	80	1	90	90
Waiting Area(s)	1	375	375	2	250	500
Public Toilet	1	42	42	2	45	90
Change Area	1	112	112	15	12	180
Pre-Procedure	4	54	216	5	90	450
Post-Procedure	4	54	216	8	90	720
Recliner	4	35	140	2	65	130
Nursing Station	1	108	108	4	40	160
Dirty Utility	1	42	42	1	35	35
Staff Break Area	1	42	42	1	180	180
Staff locker area	0	0	0	1	60	60
General Storage	1	15	15	3	50	150
Beverage Prep Area	1	40	40	2	9	18
Office	1	72	72	1	120	120
Patient Toilet	1	42	42	3	60	180
Consultation Area	0	0	0	1	140	140
Clean Utility	0	0	0	1	85	85
Staff Toilet	0	0	0	1	50	50
P&H Call Room	0	0	0	1	90	90
Sub Total			1606			3600
*Circulation @		60%	960		70%	2500
**Designated circulation			960			2000
Total area of Unit			3500			8000

Table 8. Spatial requirements

* Circulation @ - indicates the efficiency of the space

**Designated circulation – refers to the area required for corridors and primary circulation

The overall square footage required in the unit is 8000. The existing square footage of the ASU is approximately 3500 square feet. The difference is approximately 4500 square feet. It will be necessary to look at options to find additional space in surrounding areas, or consider creating an addition to the existing facility.

Spatial Adjacencies

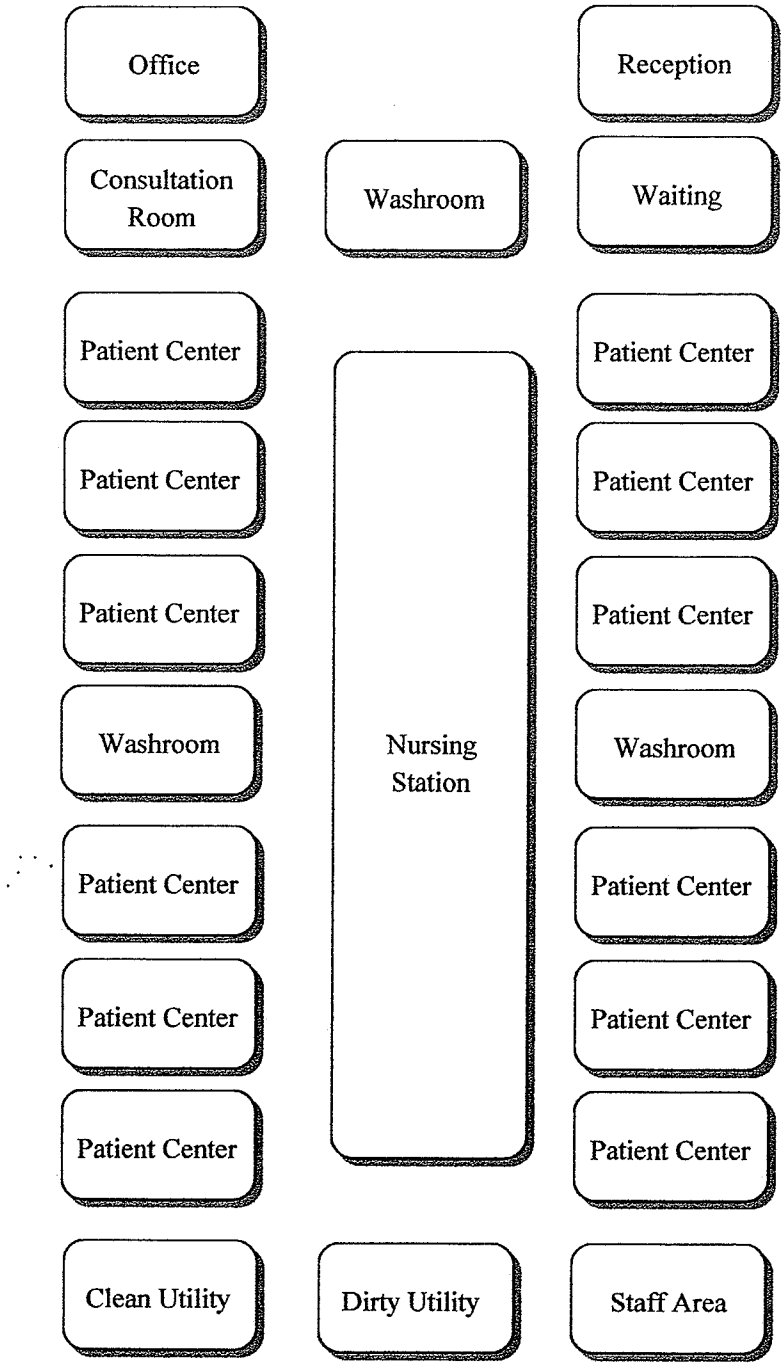


Figure 27. Spatial Adjacencies

Spatial Adjacencies											
	Admission/Waiting Area	Change Area	Unit Desk	Staff Break Area	Patient Centers	Discharge Area	Manager's Area	Dirty Utility	Beverage Prep Area	W/C 1- Waiting Area	W/C 2 - Patient Centers
Admission/Waiting Area											
Change Area	+++										
Unit Desk	+	++									
Staff Break Area	-	-	++								
Patient Center	+	+++	+++	-							
Discharge Area	++	+++	+++	-	+++						
Manager's Area	++	-	+	++	+	+					
Dirty Utility	-	-	+	-	+++	-	-				
Beverage Prep Area	-	-	++	-	++	+++	-	-			
W/C 1 - Waiting Area	+++	-	-	++	-	-	-	-	-		
W/C 2 - Patient Centers	-	++	++	-	+++	+++	-	+	-	-	

Table 9. Spatial adjacencies

Legend	
+++	Immediate Proximity
++	Close Proximity
+	Limited Proximity
-	No Proximity

Line of Site	Admission/Waiting Area	Change Area	Unit Desk	Staff Break Area	Patient Centers	Discharge Area	Manager's Area	Dirty Utility	Beverage Prep Area	W/C 1- Waiting Area	W/C 2 - Patient Centers
Admission/Waiting Area											
Change Area	-										
Unit Desk	-	-									
Staff Break Area	-	-	-								
Patient Center	-	-	+++	-							
Discharge Area	-	-	++	-	+++						
Manager's Area	-	-	+	-	+	+					
Dirty Utility	-	-	-	-	-	-	-				
Beverage Prep Area	-	-	-	-	+	++	-	-			
W/C 1 - Waiting Area	-	-	-	-	-	-	-	-	-		
W/C 2 - Patient Centers	-	-	-	-	-	-	-	-	-	-	

Table 10. Line of site

Legend	
+++	Total Visual Access
++	Limited Visual Access
+	Minimal Visual Access
-	No Visual Access

Acoustical Adjacencies	Admission/Waiting Area	Change Area	Unit Desk	Staff Break Area	Patient Centers	Discharge Area	Manager's Area	Dirty Utility	Beverage Prep Area	W/C 1- Waiting Area	W/C 2 - Patient Centers
Admission/Waiting Area											
Change Area	-										
Unit Desk	-	-									
Staff Break Area	-	-	-								
Patient Center	-	-	++	-							
Discharge Area	-	-	++	-	++						
Manager's Area	-	-	-	-	-	-					
Dirty Utility	-	-	-	-	-	-	-				
Beverage Prep Area	-	-	+	-	++	++	-	-			
W/C 1 - Waiting Area	-	-	-	-	-	-	-	-	-		
W/C 2 - Patient Centers	-	-	-	-	-	-	-	-	-	-	

Table 11. Acoustical adjacencies

Legend	
+++	Total Acoustical Transmittance
++	Limited Acoustical Transmittance
+	Minimal Acoustical Transmittance
-	No Acoustical Transmittance

Room Data Sheets

Room name: **Entrance**
Number of rooms required: **1**

Space purpose and type of activity	Point of access for patients, visitors, and staff.
Number of occupants	None – traffic moving throughout the space constantly
Spatial relationship	Should be located on convergent points of access into the ASU. Also should be directly adjacent to reception.
Visual relationship	The entrance should have a visual presence both from within the hospital corridor and exterior entrance. The entrance should also have visual access to the reception area.
Furniture and equipment	Provide seating on the perimeter of the area to allow patients to wait for pick up
Electrical lighting	Lighting should provide adequate light for visual clarity and safety
Electrical power	Supply around the base of the area and where necessary
IT systems	Security system
HVAC	Standard
Plumbing	N/A
Materiality and Finishes	Non slip flooring
Special Requirements	N/A

Room Data Sheets

Room name: **Reception**
Number of rooms required: **1**

Space purpose and type of activity	Work area for Patient Liaison. Registration and help provided at the reception area.
Number of Occupants	1, patient liaison Numerous, patients and visitors - transient
Spatial Relationship	The space should be located directly adjacent to the entrance with access to the other areas of the ASU.
Visual Relationship	• The space should have a full view of the entrance. • Full to partial views of the waiting area. • Limited views into other areas of the ASU.
Furniture and Equipment	• A workstation for patient liaison • Computer terminal • Telephone • Printer • Photocopier • Storage • Horizontal surface • 1 work seat • 2 casual seats
Electrical Lighting	• Provide overall ambient lighting • Provide task lighting for work surface
Electrical Power	Provide enough power sources to operate necessary equipment
IT Systems	Telephone, fax and network connections
HVAC	• Provide standard ventilation and air conditioning • Provide HVAC controls behind reception area
Plumbing	None
Materiality and Finishes	The reception area should use high quality finishes that provide durability and maintain the image developed for the ASU
Special Requirements	Visual access to the waiting area and entrance but limited acoustical transmission from reception to surrounding areas

Room Data Sheets

Room name: **Waiting Area**
Number of rooms required: **1**

Space purpose and type of activity	Area to allow patients to wait before admittance to the unit. Also an area for visitors to wait before, and during procedure.
Number of Occupants	Varies, maximum - 15
Spatial Relationship	Adjacent to reception; near entrance; near entrance to unit; near change room.
Visual Relationship	Visual connection with reception; limited to other areas of the unit
Furniture and Equipment	• Seating for 12-15 people • Vending machines • Television • Clock • Interior Planting • Side Tables • Magazine storage • Garbage receptacles • Water Cooler • W/C • Visual access to exterior
Electrical Lighting	No special requirements; use natural day lighting
Electrical Power	Accommodate equipment
IT Systems	Internet access; telephone access
HVAC	No special requirements
Plumbing	Drainage for vending
Materiality and Finishes	The area should be comfortable; consider using materials to limit acoustic transmission
Special Requirements	Provide child play area; furniture arrangement should create intimate groups

Room Data Sheets

Room name: **Public Toilet**
Number of rooms required: **1**

Space purpose and type of activity	Washroom facility for patient, and visitors of the ASU
Number of Occupants	1, patient; visitor;
Spatial Relationship	Adjacent to Waiting Area; Reception; Entrance
Visual Relationship	None
Furniture and Equipment	• Toilet • Sink – motion sensor faucet • Mirror • Soap dispenser – motion sensor • Paper Tower dispenser – motion sensor • Garage receptacle • Hand railings around toilet
Electrical Lighting	Motion sensor light system
Electrical Power	Standard, grounded electrical outlets
IT Systems	Emergency call system
HVAC	Provide exhaust fan
Plumbing	1 Toilet; 1 sink;
Materiality and Finishes	Non slip flooring surfaces
Special Requirements	Acoustically and visually private

Room Data Sheets

Room name: **Change Area**
Number of rooms required: **2**

Space purpose and type of activity	To provide an area for patients to change from their civilian clothing to hospital gowns. Also provides an area to secure personal effects while receiving treatment.
Number of Occupants	1/change area
Spatial Relationship	This area should be the transitional area from the waiting area to the rest of the unit. It should be near the waiting area; pre-procedure area; and stage II and stage III recovery.
Visual Relationship	There should be a visual connection to the nursing station, but privacy in each change area.
Furniture and Equipment	• 1 seat/change area • Clothes hooks • Small horizontal surface • Full size mirror • 20 individual locking storage units
Electrical Lighting	Each change area should be equipped with a light – motion sensor to go off when unoccupied.
Electrical Power	No special requirements
IT systems	Emergency call system to nursing station
HVAC	No special requirements
Plumbing	None
Materiality and Finishes	Non slip flooring
Special Requirements	This area needs to be secure and should be either locked or visually accessible to the nursing station.

Room Data Sheets

Room name: **Pre – Procedure – Patient Centers**
Number of rooms required: 8

Space purpose and type of activity	This area is where patients are prepared for their procedure. Patients may experience a wait of two hours within this area. Visitors are welcome to stay with patients once medical information has been gathered by RNs.
Number of Occupants	1 patient; visitors (maximum 2); RN staff (maximum 2)
Space relationship	Adjacent to nursing station; patient washroom; OR entrances
Visual relationship	Each patient center should be provided with the ability to vary the amount of exposure they have to the rest of the unit. Total visual privacy will be necessary for each patient center.
Furniture and equipment	• 1 stretcher • 1 seat • 1 computer terminal • 1 monitor • 1 stretcher table • 1 television •
Electrical Lighting	• Overall ambient lighting • Each patient center is equipped with personally controllable lighting.
Electrical Power	Accommodate the equipment
IT Systems	• Cable access • Emergency call system • Network connection • Code Blue Alarm
HVAC	No special requirements
Plumbing	None
Materiality and Finishes	Floor surfaces should be non-slip. They also need to be easily cleanable.
Special Requirements	This area should be comfortable for patients and visitors as they wait for their procedure. • 1 suction unit • 1 Oxygen outlet

Room Data Sheets

Room name: **Recovery Area (Stage II) – Patient Centers**
Number of rooms required: 6

Space purpose and type of activity	Patients return to this area after the completion of their procedure from either the Operating Room or Post Anesthesia Care Unit
Number of Occupants	6 patients; visitors (2/patient); ASU staff
Spatial Relationship	Adjacent to Nursing Station; Patient Toilet; Change Area
Visual Relationship	Visual Access from Nursing Station Visual connection to the outdoors.
Furniture and Equipment	• 1 stretcher • 1 seat • 1 computer terminal • 1 monitor • 1 stretcher table • 1 television • 1 suction unit • 1 Oxygen outlet
Electrical Lighting	• Overall ambient lighting • Each patient center is equipped with personally controllable lighting. • 1 locally controlled light
Electrical Power	Accommodate equipment
IT Systems	• Cable access • Emergency call system • Network connection • Code Blue Alarm
HVAC	No special requirements
Plumbing	None
Materiality and Finishes	Floor surfaces should be non-slip. They also need to be easily cleanable.
Special Requirements	This area should be comfortable for patients and visitors as they recover from their procedure.

Room Data Sheets

Room name: **Recovery Area (Stage III) – Patient Centers**
Number of rooms required: 4

Space purpose and type of activity	Patients enter this area via the change area to receive their discharge instructions and complete discharge paperwork
Number of Occupants	1 patient, visitors, 1 RN
Spatial Relationship	Adjacent to Change area; Entrance; Toilet; Nursing Station
Visual Relationship	None
Furniture and Equipment	• Seating for patient • Seating for visitors • Computer terminal • Table
Electrical Lighting	No special requirements
Electrical Power	Accommodate the equipment
IT Systems	• Network connection • Emergency call system • Code Blue alarm
HVAC	No special requirements
Plumbing	None
Materiality and Finishes	Floor surfaces should be non-slip. They also need to be easily cleanable.
Special Requirements	This area should be comfortable for patients and visitors as they recover from their procedure.

Room Data Sheets

Room name: **Nursing Station**
Number of rooms required: **1**

Space purpose and type of activity	This area acts as the hub of the unit. Staff are continually using this area for charting, ordering, and organizing the units flow.
Number of Occupants	Varies; 6 maximum
Spatial Relationship	Adjacent to pre-procedure; recover stage II and III; change area; storage
Visual Relationship	Visual connection with the majority of the unit.
Furniture and Equipment	• 4 computer terminals • Seating for 4 staff • 3 telephones • 1 Facsimile machine • 1 Paper shredder • 1 printer • 1 label printer • 36" high horizontal surface • 28" high horizontal surface • 1 sink • Storage • Narcotics storage (locked) • Chart storage
Electrical Lighting	• Ambient lighting • Controllable workstation lighting
Electrical Power	Accommodate the equipment
IT Systems	• Network connection • Emergency call system • Code Blue alarm • Public Address system • Telephone Access
HVAC	None
Plumbing	Sink
Materiality and Finishes	• Floor finishes should be smooth to allow chairs and equipment to roll easily. • Work surfaces should limit glare and provide appropriate visual contrast
Special Requirements	• The station should be central located to have visual access to the majority of the unit. • Areas within the station should provide limited acoustical transmission • Visual access should be limited into the nursing station.

Room Data Sheets

Room name: **Dirty Utility**
Number of rooms required: **1**

Space purpose and type of activity	To dispose of soiled materials and bodily fluids
Number of Occupants	Various – RNs and cleaning staff
Spatial Relationship	Adjacent to Pre-procedure area; stage II recovery
Visual Relationship	None
Furniture and Equipment	• Garbage Receptacles • Dirty Linen Receptacles
Electrical Lighting	Motion sensor lighting
Electrical Power	To accommodate equipment
IT Systems	None
HVAC	Exhaust fan
Plumbing	• Hopper • Floor Drain • Hand washing sink
Materiality and Finishes	Surfaces should be seamless, water resistant and highly washable
Special Requirements	Isolated from the rest of the unit

Room Data Sheets

Room name: **Clean Utility**
Number of rooms required: **1**

Space purpose and type of activity	Storage area for linen
Number of Occupants	Varies
Spatial Relationship	Adjacent to Nursing Station
Visual Relationship	None
Furniture and Equipment	• Cart Storage
Electrical Lighting	Motion sensor lighting
Electrical Power	To accommodate equipment
IT Systems	Speaker for page system
HVAC	None
Plumbing	None
Materiality and Finishes	None
Special Requirements	None

Room Data Sheets

Room name: **Staff Break Area**
Number of rooms required: **1**

Space purpose and type of activity	Break area for staff to eat lunch, have coffee, or have conversations with fellow colleagues
Number of Occupants	Varies – 1 to 6
Spatial Relationship	Adjacent to the Nursing Station
Visual Relationship	None to the rest of the ASU
Furniture and Equipment	• Horizontal Surface • Microwave • Refrigerator • Seating for 4-8 people • Sink • Closed Storage • Information Board • Magazine Rack • Telephone • Supply Storage
Electrical Lighting	Motion sensor lighting
Electrical Power	Accommodate equipment
IT Systems	Speak for paging system
HVAC	None
Plumbing	Sink
Materiality and Finishes	The area should be comfortable and reflect the staff that works there. Consider providing tack board surfaces for notices, pictures, etc.
Special Requirements	None

Room Data Sheets

Room name: **Storage**
Number of rooms required: **1**

Space purpose and type of activity	To provide a space to store medical supplies, including sterile and non sterile items
Number of Occupants	Varies – Nursing staff
Spatial Relationship	Adjacent to Nursing Station
Visual Relationship	None
Furniture and Equipment	Carts
Electrical Lighting	Motion Sensor lighting
Electrical Power	Accommodate equipment
IT systems	Speaker for page system
HVAC	None
Plumbing	None
Materiality and Finishes	None
Special Requirements	• Sterile items must be stored above non-sterile items, especially liquids. • Materials must be clearly labeled and easily accessible. • The area must be open during the day and secure during the hours the unit is closed.

Room Data Sheets

Room name: **Beverage Preparation Area**
Number of rooms required: **1**

Space purpose and type of activity	Patients are provided with a beverage after their procedure and must be able to drink it before they can be discharge. The area provides storage and preparation area for this activity.
Number of occupants	Varies
Space relationship	Adjacent to Stage II recovery area; nursing station
Visual relationship	None
Furniture and equipment	• Refrigerator • Sink • Waste Receptacle • Horizontal work surface • Water Cooler • Coffee Maker
Electrical lighting	No special requirements
Electrical power	To accommodate equipment
Special systems	Speaker for page system
HVAC	None
Plumbing	Sink, hot water dispensing tap
Materiality and Finishes	None
Special Requirements	None

Room Data Sheets

Room name: **Office**
Number of rooms required: **1**

Space purpose and type of activity	Unit supervisor's office to conduct interviews, individual meetings with staff, telephone conversations, supply procurement, etc.
Number of Occupants	1, manger
Spatial Relationship	Adjacent to Nursing Station with separate access
Visual Relationship	To nursing station
Furniture and Equipment	• Secure file storage • Horizontal surface • Seating for 2-3 people • Computer terminal • Telephone • Printer • Open Storage • Closed Storage
Electrical Lighting	• Ambient lighting • Task lighting at desk surface
Electrical Power	To accommodate equipment
IT systems	• Network connection • Emergency call system • Public Address system • Telephone Access
HVAC	No special requirements
Plumbing	None
Materiality and Finishes	None
Special Requirements	The office should have visual access to the unit but be acoustically private.

Aesthetic Quality

Visual Concept

As a means of creating a unique experience for the users of the ASU, and extracting design strategies from the literature review, the practicum has created a distinctive visual experience. This visual experience will be based on the landscape of the beach. Using the imagery, materiality, and spatial characteristics of the beach, the practicum will develop a relaxing, and calming environment where patients will be treated.

The materials that make up the beach create a specific visual experience, but when light qualities and levels are change the impact on the overall appearance of the materials is significant. The beach in effect has an ever-changing atmosphere. The implication of this can be translated to the design of the ASU. By altering light levels and colour temperatures, or shifting the coloration of the same material the design can provide users with an environment that would seem to evolve similarly to changes experienced on the beach. Allowing visual access to the outside can help orientate patients to time and place. Where access to the exterior is not possible, perhaps an artificial indication of passing time could be engineered.

To investigate the various lighting conditions experienced at the beach, the practicum has looked to examples of the beach in art. The emotion, coloration and composition found in art provide various interpretations of the beach. The practicum was identified several artworks to use as inspiration.

Design Guidelines

The following design guidelines were developed based on Kumlin's programming technique, which suggests identifying information through *issues, objectives*, and *concepts* related to the programmatic intention. Several of the issues listed by Kumlin will use in the program and several others have been added. These issues provide an opportunity to identify the objectives, and develop concepts, which address the design of the ASU. The objectives and concepts will be informed by the retail and residential design strategies and the functional requirements identified in the literature review.

The practicum was identified three critical areas to be dealt with by the design of the new ASU.

- Interaction and Privacy
- Physical and Psychological Comfort
- Image Identity

Interaction and Privacy – External, Individual, Group, Social, Visual, and Acoustical

Distance

Objective: The design should use distance between functional areas as a means of creating privacy (however, distance should not inhibit the efficiency of the staff).

Concept: Consider situating areas requiring more privacy away from main circulation paths and access points.

Concept: Consider creating distance by extending views to generate the sense of space and distance.

Concept: Consider clustering interrelated functions to allow better flow of information and personnel.

Barriers

Objective: The design should pay particular attention to the articulation of barriers and partitions to create privacy, while limiting isolation and maintaining sight lines for staff.

Concept: Consider using translucent partitions.

Concept: Consider providing barriers that have the capacity to alter the degree of privacy.

Objective: The design should consider acoustical privacy provided by barriers.

Concept: Consider the acoustical transmission of barriers.

Conversations

Objective: The design should provide areas where conversations can be private, especially when involving patients' medical information.

Concept: Consider providing a private area where physicians can dictate patients' histories.

Concept: Consider providing a space for staff to discuss sensitive material.

Concept: Consider limiting acoustical transfer between patient centers.

Documentation

Objective: The design should provide a secure area for medical documentation.

Concept: Consider locating chart storage behind the unit desk.

Concept: Consider positioning of computer monitors to limit visual access of patients and visitors.

Concept: Consider location of personal information within patient centers.

Comfort – Physical & Psychological

Isolating space

Objective: The design should avoid spaces that create an involuntary sense of isolation.
Concept: Consider creating spaces with visual access to other areas.
Concept: Consider providing interesting visual focal points from stationary points.
Concept: Consider providing visual access to the exterior.
Concept: Consider providing restricted views of circulation paths and other high activity areas to create a sense of connection without compromising privacy.

Exposing space

Objective: The design should shelter patients from undesired exposure while in the patient centers.
Concept: Consider using adjustable screening system to allow patients to monitor their own level of exposure.
Concept: Consider creating smaller scale areas to limit the sensation of total exposure.

Lighting levels

Objective: The design should provide lighting conditions to facilitate users' activities and comfort.
Concept: Consider providing or increase amount of individually controllable lighting.
Concept: Select light temperatures ranging the full light spectrum.
Concept: Use lighting to define zones and indicate activity.
Concept: Consider using diffuse, soft light rather than direct or spotlights that could create glare or harsh lighting.

Objective: The design should provide patients with the opportunity to control light levels.
Concept: Consider providing individual lighting in patient centers.
Concept: Consider lighting that has adjustable levels.
Concept: Consider using warm light color to increase the feeling of residential environments.

Objective: The design should use a variety of light sources to achieve a varying light levels.
Concept: Consider using a variety of light fixtures to achieve numerous lighting effects.
Concept: Consider creating design detail with lighting and light fixtures.

Outdoor connection

Objective: The design should maximize access to natural daylight.
Concept: Consider orientating patient care centers near natural light source.
Concept: Consider creating the effect of natural daylight through the use of full spectrum lighting.
Concept: Consider orientating recovery areas closest to daylight sources to re-orientate drowsy patients.

Objective: The design should provide patients with a connection to the outdoors, while insuring privacy.
Concept: Consider the placement of fenestration to control views in and out.
Concept: Consider the opacity of fenestration.
Concept: Consider creating the visual effect of exterior access where none may exist.

Objective: The design should make connections with nature and the natural environment.
Concept: Consider the use of natural materials.
Concept: Consider the use of materials that represent natural materials.

Scale

Objective: The design should incorporate residential scale in private areas.
Concept: Consider providing thresholds to suggest space delineation.
Concept: Consider shifting ceiling planes to suggest change in occupancy.
Concept: Consider scale of furnishing and effect on desired aesthetic.

Objective: The design should develop a retail scale in public areas.
Concept: Consider providing a more open feel in public areas.

Ambience

Objective: The design should provide a calming environment.
Concept: Consider incorporating aspects of nature.
Concept: Consider creating a visually stimulating environment.
Concept: Consider using materials and lighting in to create a calming environment.
Concept: Consider limiting acoustical transmission using white noise or sound damping techniques.

Views

Objective: The design should consider views from static areas.
Concept: Consider creating focal points.
Concept: Consider providing views of the exterior environment.

Visual Concept – Identity, Symbolism, & Character

Entrance & Waiting Areas

Objective: The design should make visitor and patient feel comfortable.
Concept: Consider providing comfortable seating.
Concept: Consider material selection to create a calming environment.
Concept: Consider furniture arrangement to create more intimate areas.

Change Area

Objective: The design should highlight the importance of this transition point.
Concept: Consider using lighting to enhance the appearance of patients.
Concept: Consider providing a full-length door to provide greater privacy.
Concept: Consider furnishing room with a seat.
Concept: Consider material use.

Pre-Procedure

Objective: The design should reduce anxiety.
Concept: Consider using calming colors.
Concept: Consider providing focal points and visual interest.
Concept: Consider furnishing with residential scale furnishings.
Concept: Consider limiting the appearance of technology.
Concept: Consider providing patients with a sense of control, to limit uncertainty, through the ability to adjust their environment
Concept: Consider using natural materials.

Stage II Recovery

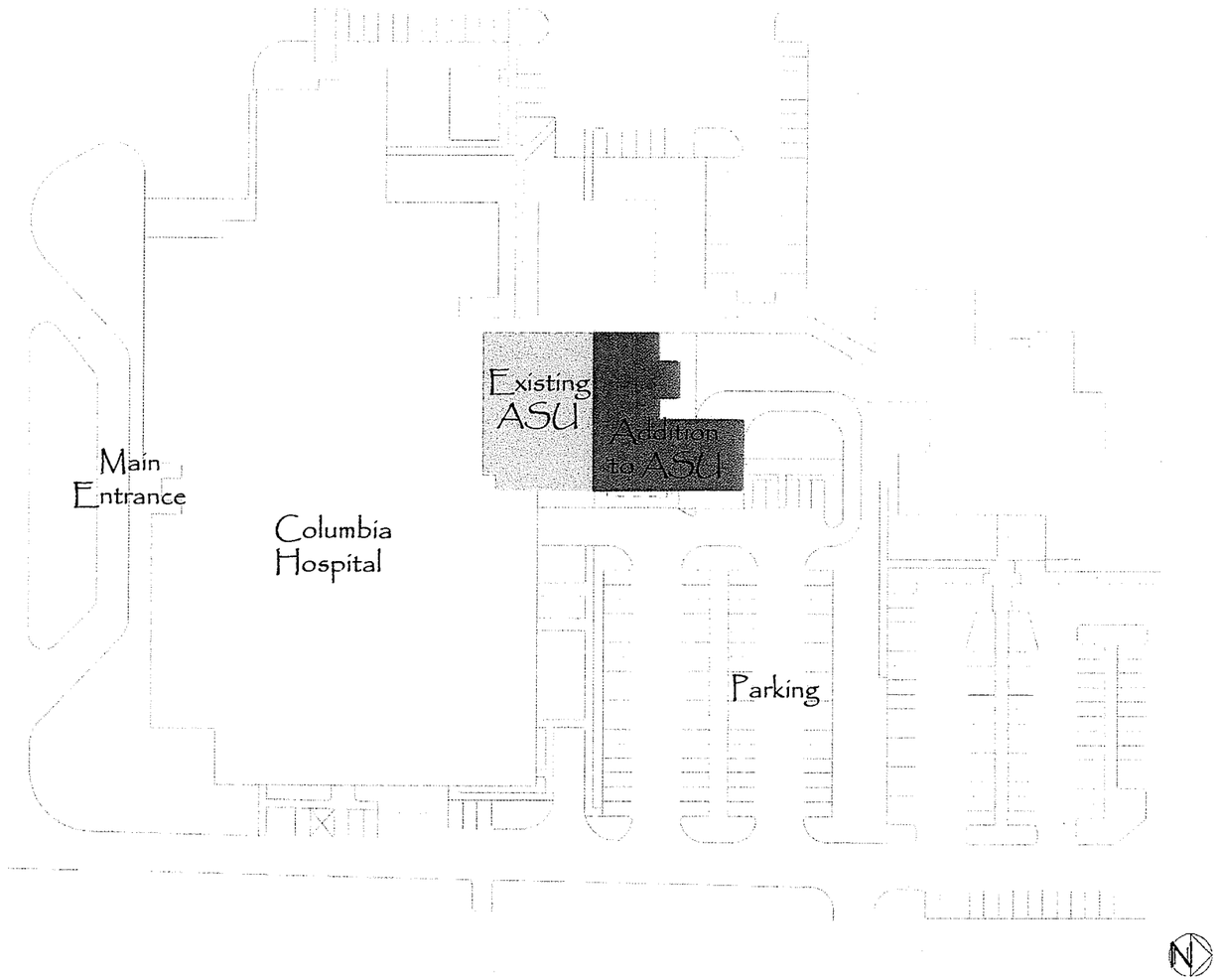
Objective: The design should re-orientate patients recovering from anesthetic.
Concept: Consider providing an opportunity to display a personal affect.
Concept: Consider providing seating for visitors with patient as they recover.
Concept: Consider providing views of the exterior to orientate patients to time of day and weather conditions.
Concept: Consider providing clocks in patient areas.
Concept: Consider using softer lighting levels and soothing color selections.

Stage III Recovery

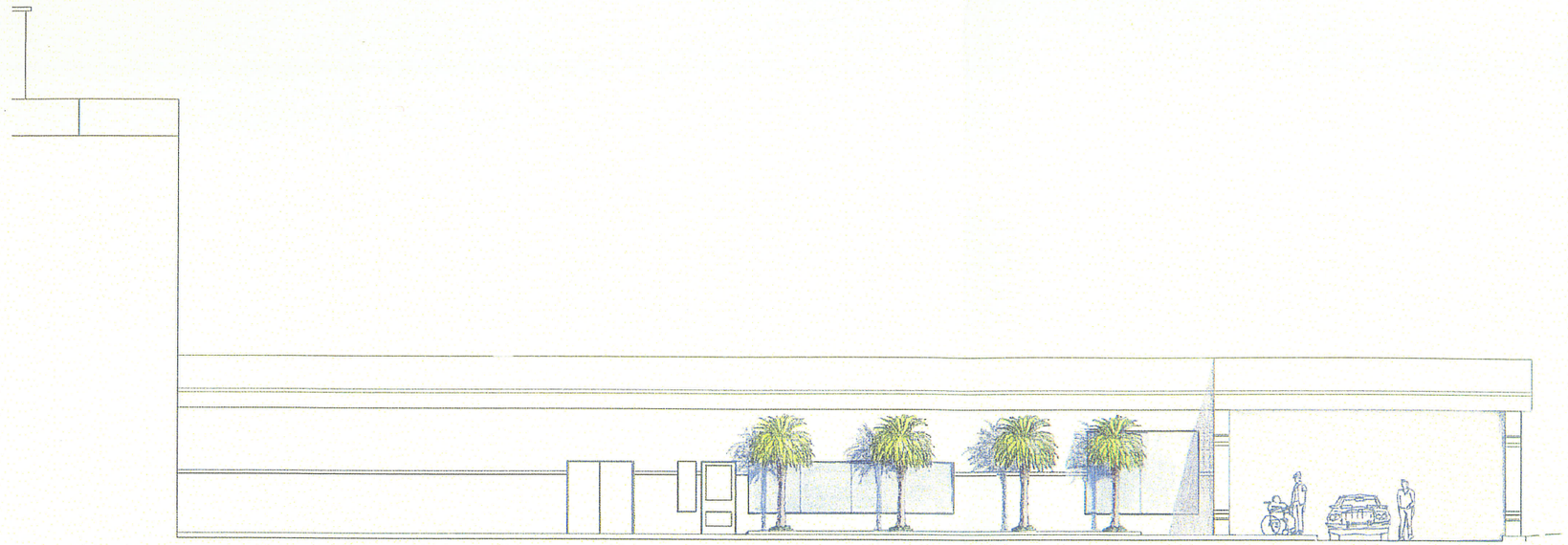
Objective: The design should provide a positive experience for patients, as it is the last space they occupy.
Concept: Consider materials selection.
Concept: Consider using brighter lighting and color selection to stimulate patients.

Nursing Station

Objective: The design should avoid creating a large nursing station, which can increase anxiety levels of patients. The station should be visible to reinforce access to care and nursing staff.
Concept: Consider using constant materials to blend the nursing station with surrounding areas.
Concept: Consider shielding higher lighting levels with adjustments to the ceiling plane.
Concept: Consider providing a visual barrier for the interior of station.



Context Plan



West Exterior Elevation

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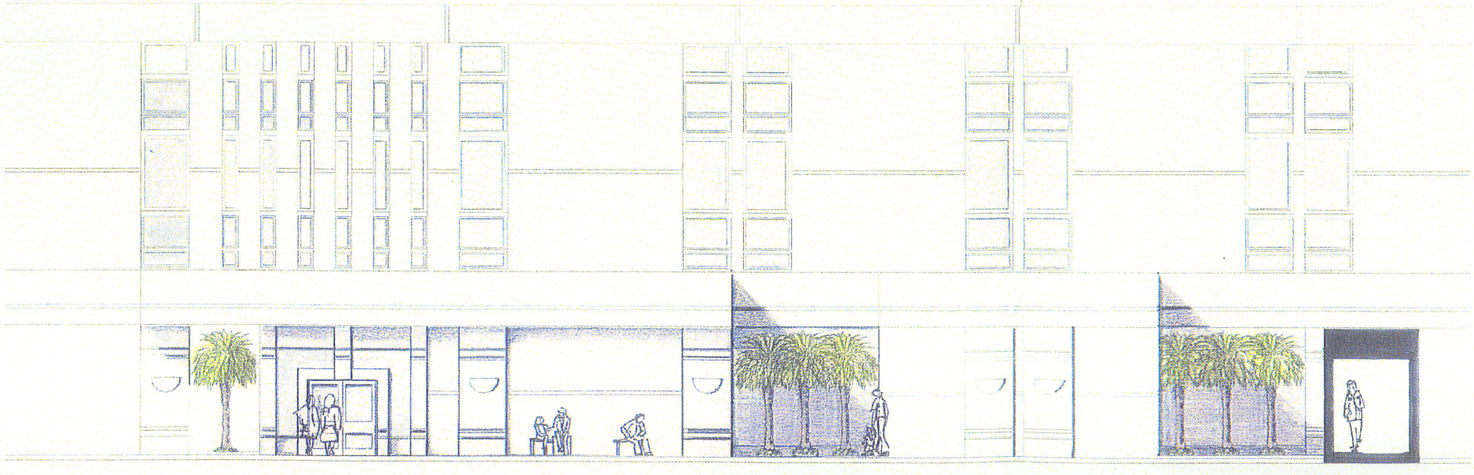
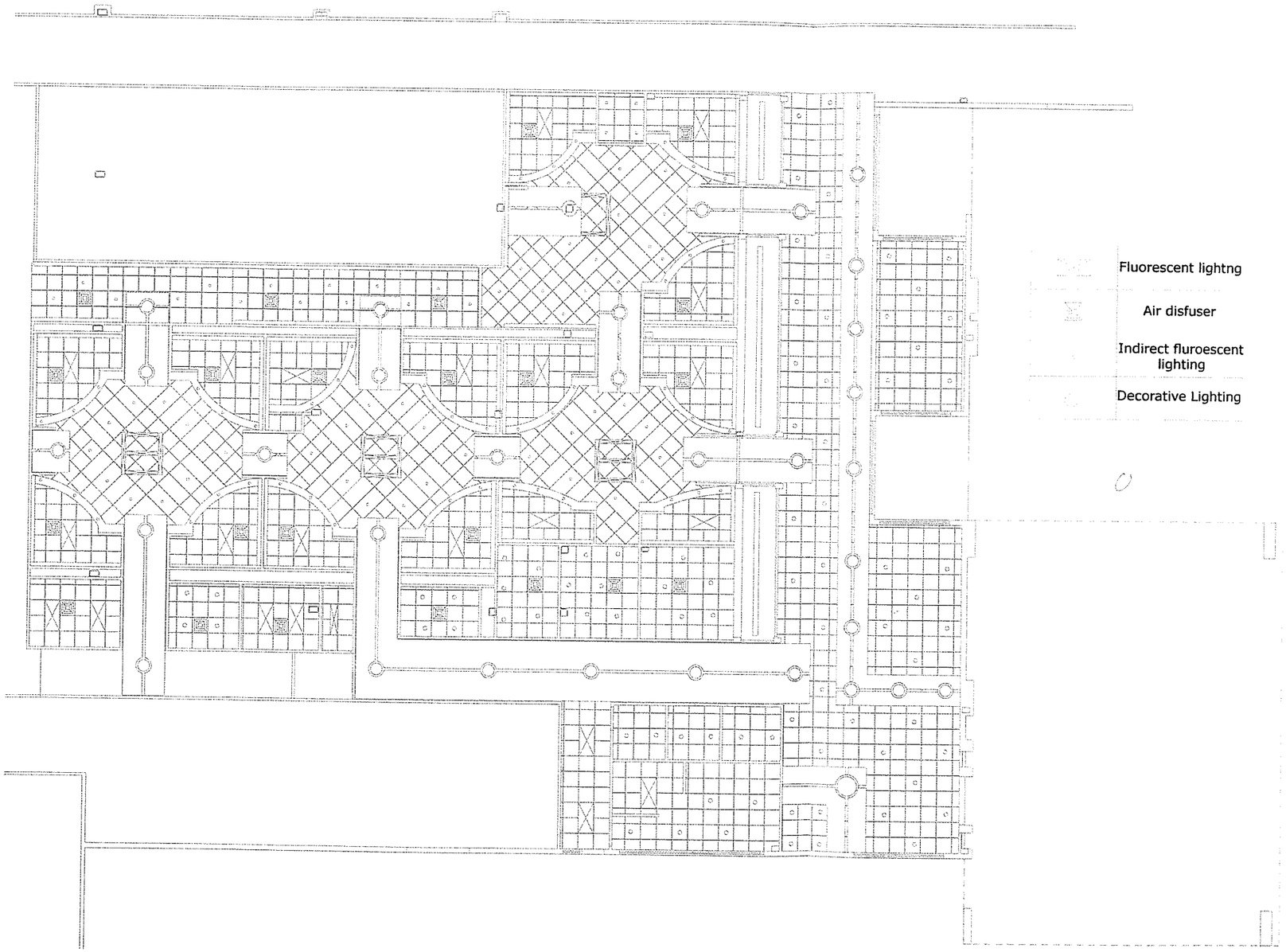


South Exterior Elevation

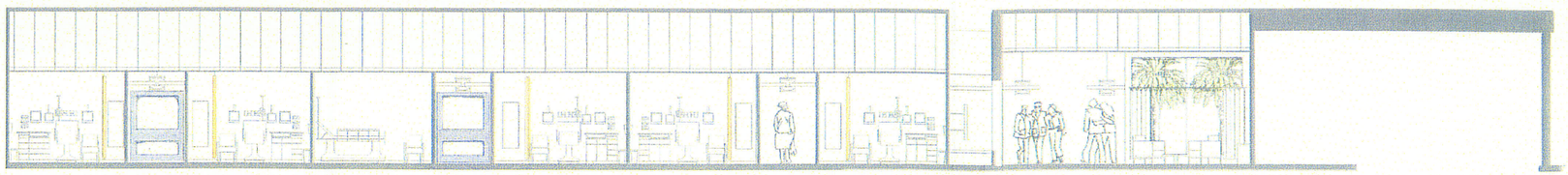
Scale 1/8" = 1' (Printed @ 60%)

Floor Plan

Scale 1/8" = 1' (Printed @ 60%)



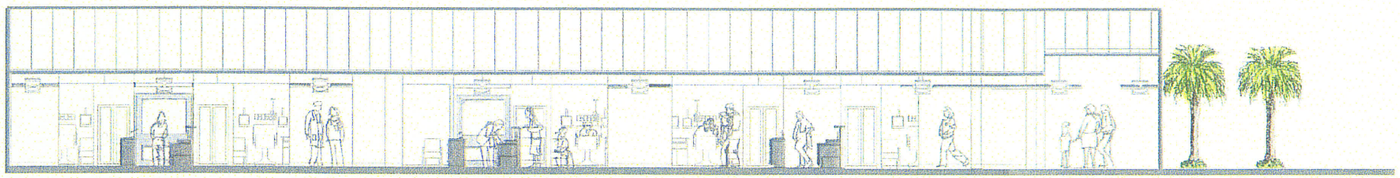
Reflected Ceiling Plan



S1

Patient Centers Section

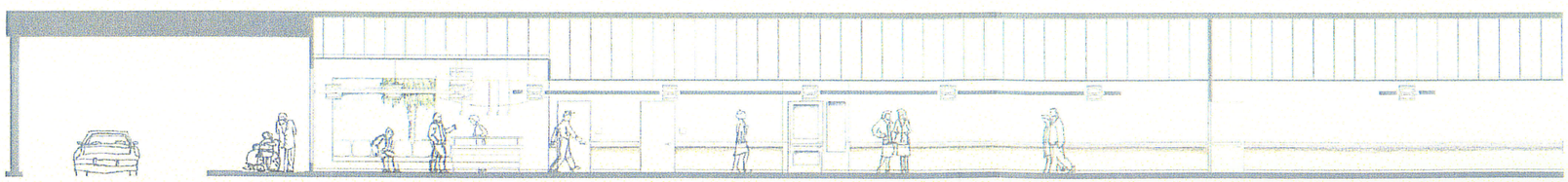
Scale 1/8" = 1' (Printed @ 60%)



S2

Nursing Station Section

Scale 1/8" = 1' (Printed @ 60%)



S3

Corridor Section

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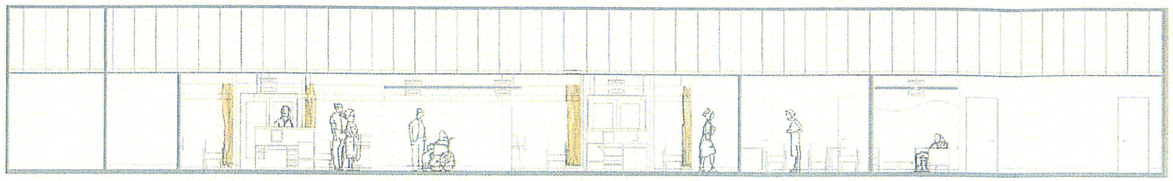
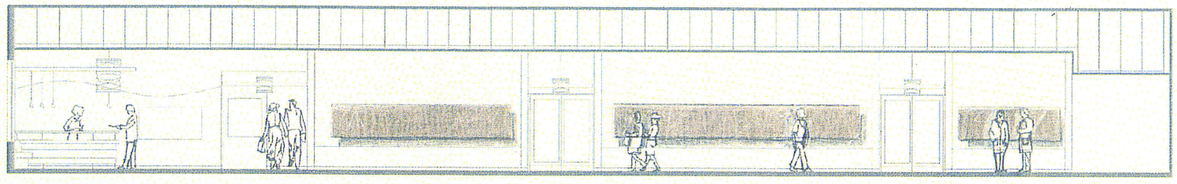


S4

Office Section

Scale 1/8" = 1' (Printed @ 60%)



E1

Water Feature Elevation

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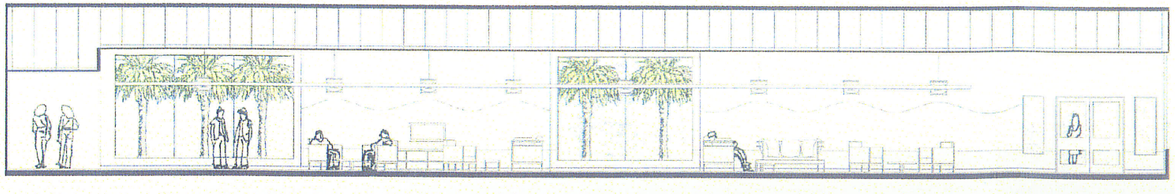
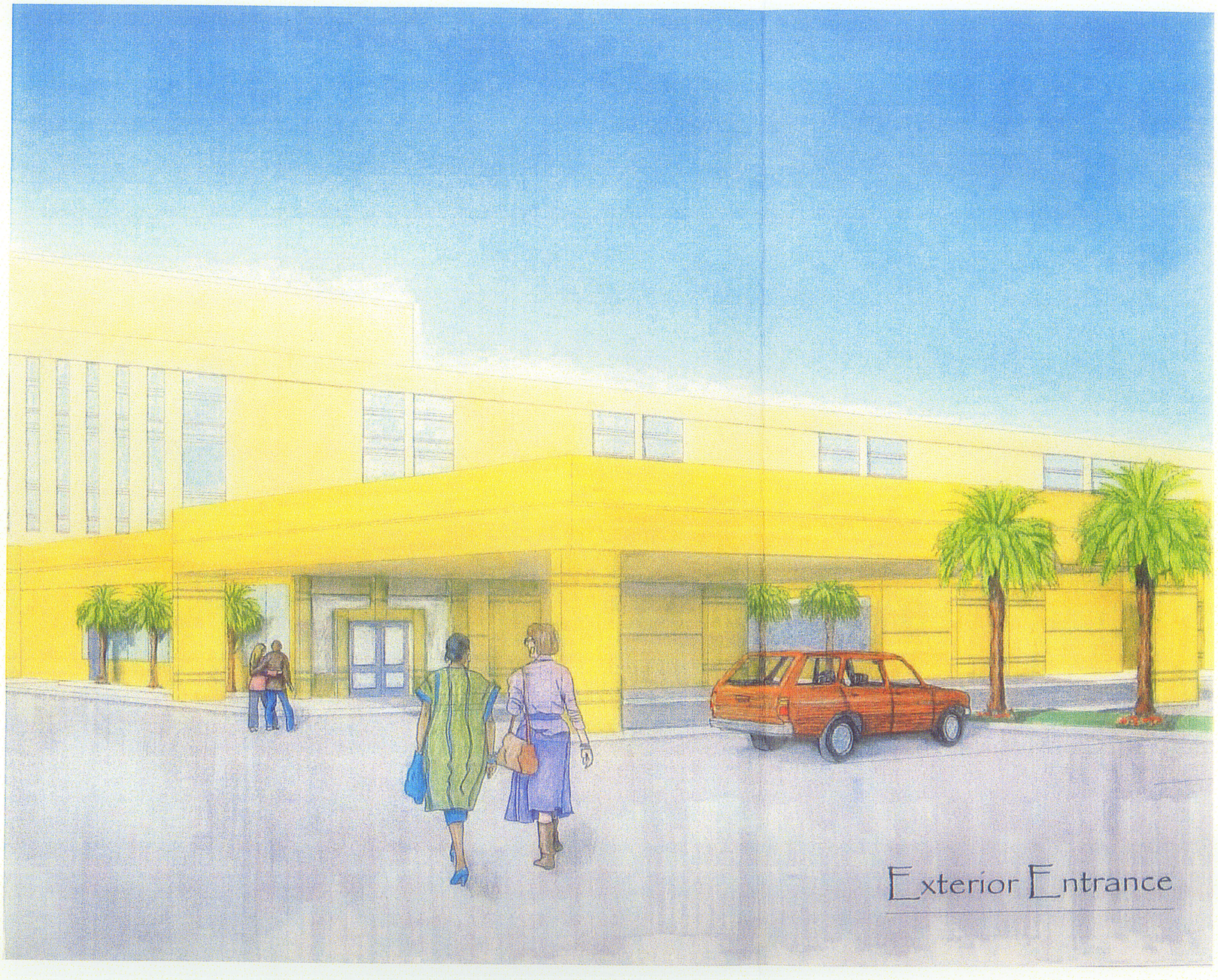


E2

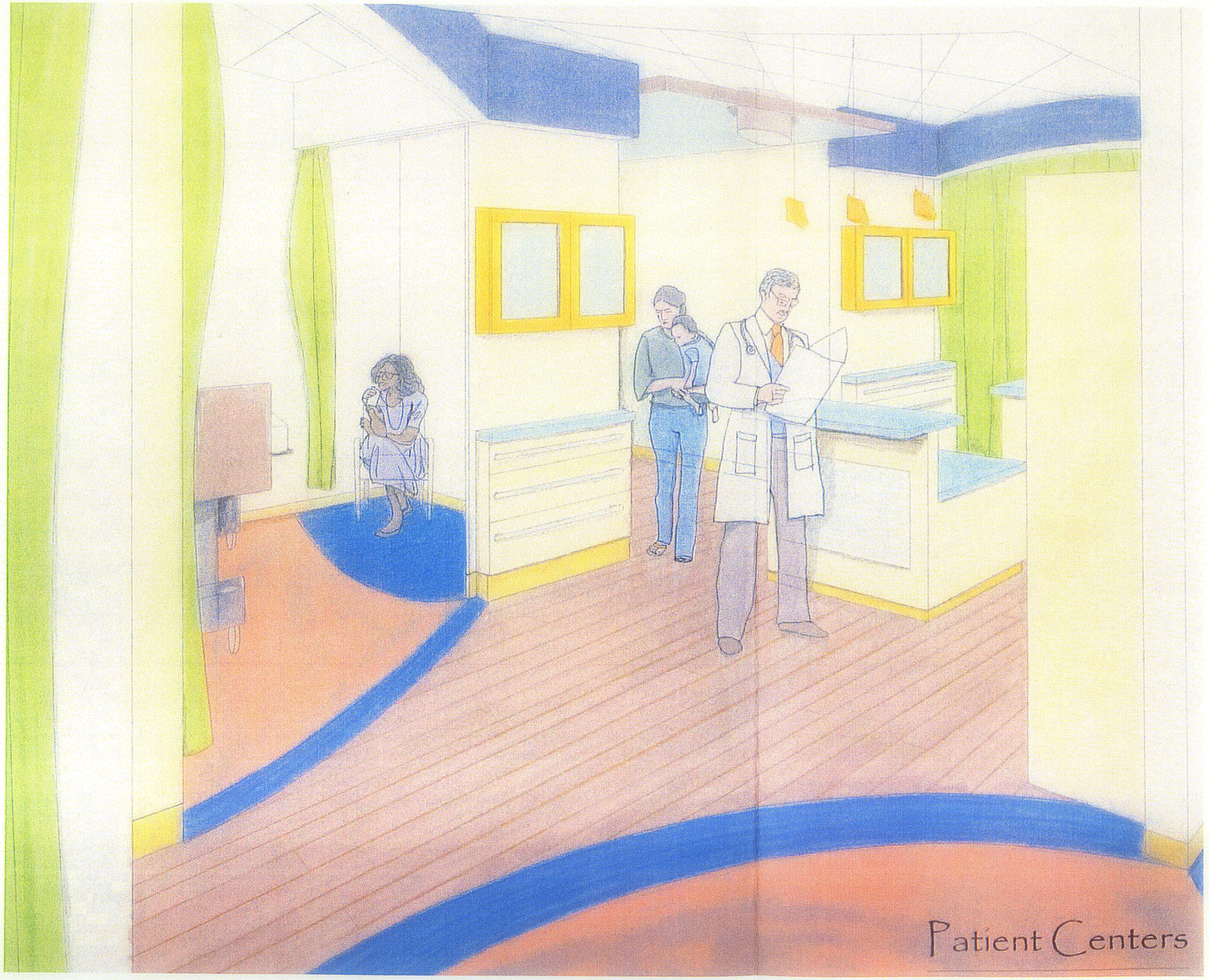
Waiting Area Elevation

Scale 1/8" = 1' (Printed @ 60%)



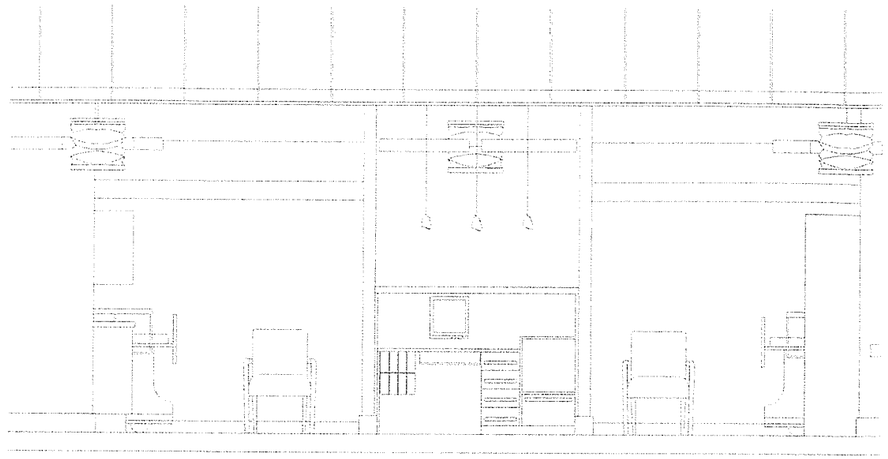
Exterior Prespective

Waiting Area Perspective

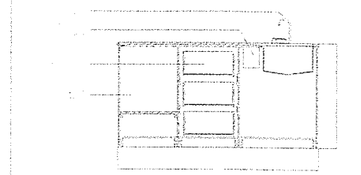


Patient Center Prespective

Material Board

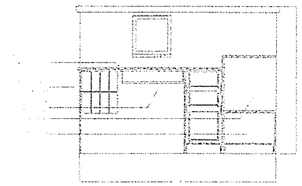


Nursing Station in Context

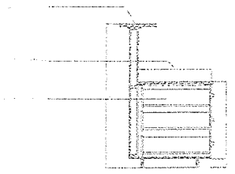


S1

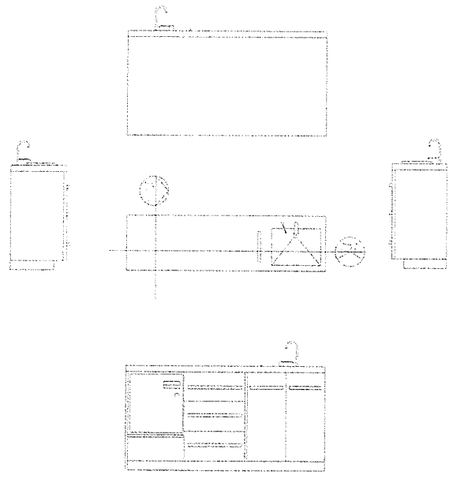
S2



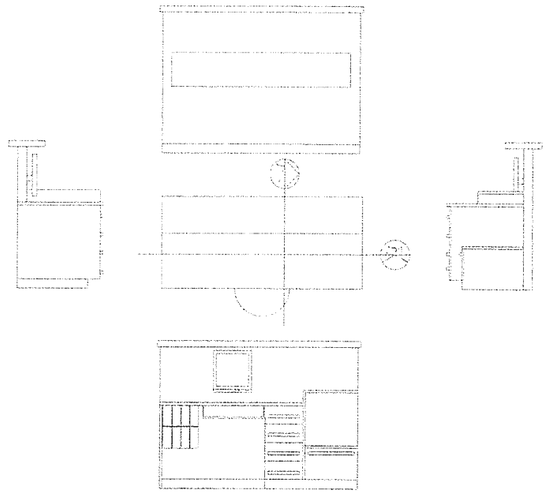
S3



S4



Sink and Narcotics Storage



Work Station

Nursing Station
Construction Detail

Section 6. Summary

The information discovered in the literature review and programme was synthesized through the design development of the ASU. The outcome of that process is the final design solution for the ASU, presented here. The priority statements outlined in the programme anchored the design development. They include 4 key components. Interaction and privacy suggested the design should consider the privacy and interaction of all users, and how the interior design can facilitate appropriate amount of privacy regarding occupant, use, and time considerations. Comfort was another factor suggesting the design should provide a comfortable environment for all users, through spatial articulation, furnishings, material selection, and color application. Visual concept of the design should create a relaxing, interior environment where patients feel control, comfort, and dignity. The delivery of care should support the delivery of quality care in an effective and responsive manner. With these 4 components as the mandate for the design development the practicum created the design solution.

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Appendix A

Codes, Regulations and Standards
Florida Building Codes
SECTION 419
HOSPITALS

(9) Outpatient Surgery.
(a) There shall be a separate area where outpatients may change from street clothing into hospital gowns and be prepared for surgery. This would include male and female locker rooms, toilets, clothing change or gowning areas. A common waiting room shall be provided. This function may be accommodated in the patient bedroom area.
(b) There shall be an outpatient recovery room. The recovery room may be part of the inpatient recovery area.

Florida Building Codes
Appendix 9
Outpatient Facilities

9.1.B. Outpatient Facility Classification

Except for the emergency unit, the outpatient facilities described herein are used primarily by patients capable of traveling into, around, and out of the facility unassisted. This includes the disabled confined to wheelchairs. Occasional facility use by stretcher patients should not be used as a basis for more restrictive institutional occupancy classifications.

Facilities shall comply with the "Ambulatory Health Care Centers" section of NFPA 101, in addition to details herein, where patients are rendered incapable of self-preservation due to the care process.

9.1.C. Facility Access
Building entrances used to reach the outpatient services shall be at grade level, clearly marked, and located so that patients need not go through other activity areas.

9.1.H. Privacy for Patients
Each facility design shall ensure appropriate levels of patient audible and visual privacy and dignity throughout the care process, consistent with needs established in the program.

9.2 Common Elements for Outpatient Facilities
The following shall apply to each outpatient facility described herein with additions and/or modifications as noted for each specific type.

9.2.A. Administration and Public Areas
9.2.A1. Entrance. Located at grade level and able to accommodate wheelchairs.
9.2.A2. Public services shall include:
a. Conveniently accessible wheelchair storage.
b. A reception and information counter or desk.
c. Waiting space(s).

d. Conveniently accessible public toilet(s).
e. Conveniently accessible public telephone(s).
f. Conveniently accessible drinking fountain(s).

9.2.A7. Special storage for staff personal effects with locking drawers or cabinets shall be provided. Such storage shall be near individual workstations and staff controlled.

9.2.B. Clinical Facilities

9.2.B1. General-purpose examination room(s). For medical obstetrical, and similar examinations, rooms shall have a minimum floor area of 80 square feet, excluding vestibules, toilets, and closets. Room arrangement should permit at least 2 feet 8 inches clearance at each side and at the foot of the examination table.

9.2.B5. Nurses station(s). A work counter, communication system, space for supplies, and provisions for charting shall be provided.

9.2.B6. Drug distribution station. This may be a part of the nurses' station and shall include a work counter, sink refrigerator, and locked storage for biological and drugs.

9.2.B7. Clean storage. A separate room or closet for storing clean and sterile supplies shall be provided. This storage shall be in addition to that of cabinets and shelves.

9.2.B8. Soiled holding. Provisions shall be made for separate collection, storage, and disposal of soiled materials.

9.2.B10. Wheelchair storage space. Such storage shall be out of the direct line of traffic.

9.2.E. Housekeeping Room(s)

At least one housekeeping room per floor shall be provided. It shall contain a service sink and storage for housekeeping supplies and equipment.

9.2.F. Staff Facilities

Staff locker rooms and toilets shall be provided.

9.2.H. Details and Finishes

9.2.H1. Details shall comply with the following standards:

a. Minimum public corridor width shall be 5 feet. Staff only corridors may be 44 inches wide.
b. Each building shall have at least two exits that are remote from each other. Other details relating to exits and fire safety shall comply with NFPA 101 and the standards outlined herein.
c. Items such as drinking fountains, telephone booths, vending machines, etc., shall not restrict corridor traffic or reduce the corridor width below the required minimum. Out-of-traffic storage space for portable equipment shall be provided.
d. The minimum nominal door width for patient use shall be 3 feet. If the outpatient facility services hospital inpatients, the minimum nominal width of

the doors to rooms used by hospital inpatient transported in beds shall be 3 feet 8 inches.

e. Doors, sidelights, borrowed lights, and windows glazed to within 18 inches of the floor shall be constructed of safety glass, wired glass, or plastic glazing material that resists breakage and creates no dangerous cutting edges with broken.
f. Threshold and expansion joint covers shall be flush with the floor surface to facilitate use of wheelchairs and carts.
g. Hand washing stations shall be located and arranged to permit proper use and operation. Particular care shall be taken to provide the required clearance for blade-type handle operation.
h. Provisions for hand drying shall be included at all hand washing stations expect scrub sinks.
i. The minimum ceiling height shall be 7 feet 10 inches

9.2.H2. Finishes shall comply with the following standards:

a. Cubicle curtains and draperies shall be noncombustible or flame-retardant and shall pass both the large- and small-scale tests required by NFPA 701.
b. The flame-spread and smoke-developed ratings of finishes shall comply with Section 7.29 and Table 9.1. Where possible, the use of materials known to produce large amounts of noxious gases shall be avoided.
c. Floor materials shall be readily cleanable and appropriately wear-resistant. In all areas subject to wet cleaning, floor materials shall not be physically affected by liquid germicidal and cleaning solutions.
d. Wall finishes shall be washable and, in the proximity of plumbing fixtures, shall be smooth and moisture resistant.
e. Wall bases in areas that are frequently subject to wet cleaning shall be monolithic and covered with the floor; tightly sealed to the wall; and constructed without voids.

Appendix B

Lighting Standards
Illuminating Engineering Society of North America

Surgical Holding Areas

- Subdued illumination is advisable
- Lighting should be out of patient's line of sight
- Higher illuminance is needed for supervision and observation
- Horizontal and vertical illuminances are necessary
- Flicker-free illumination of good color rendering is important

Nursing Station

- Below counter or cabinet luminaries should provide task illumination
- Task lighting should supplement general illumination
- Computer and monitoring screens should be positioned to eliminate glare

Corridors
Should have transition lighting