Am I

Rockin' & Rollin'

towards

Enlightenment?

And what on earth does

Zen

have to do with

Healthcare Facility Planning?

A collection of **A4** thoughts by

Hussain Varawalla

A young, schizophrenic IIT'ian designing healthcare facilities for a living and trying to rock 'n roll his way towards self-actualization

Introduction

A man who knows he is flawed has taken the first step towards wholeness.

Twenty-five years ago, a young, struggling twenty-something designer working in the office of an internationally renowned architect in Mumbai, India, a recent graduate from the Indian Institute of Technology, Kharagpur, abusing both alcohol and hashish every night, I was cursed with a diagnosis of paranoid schizophrenia.

Today, I am blessed with the self-realization that I am flawed. Aaaahh, I hear you go, surely you could have figured that out a long time back. But, dear reader, you underestimate the underlying arrogance of youth, an IIT'ian, a designer and a schizophrenic.

Matchbox 20 sings something like:

"I'm not crazy, I'm just a little unwell
I know, right now you can't tell…
But stay awhile now baby and then you'll see
A different side of me…"

I guess all concerned had to stick around for a long time, many couldn't make the distance – I lost dear friends along the way – but after this quarter of a century I am in the process of taking the first step towards wholeness, this book I am writing is part of this therapeutic journey, and with each line I type I get a little, little better.

Do you know who or what Matchbox 20 is? Obviously a band, one that the kids listen to nowadays. In the United States you get matches in little folders, like the ones' you get in 5 star hotel bars in India; I think there must be 20 matchsticks in each of those folders. If someone from this band spent a lot of time in bars, he would be a prime candidate for being 'a little unwell'; hopefully he has already shown his fans and family the 'different side' he sings about.

The Pali word *sukkha* is usually translated as happiness. As the different side of *dukkha*, however, it means the end of suffering, a state of being in which happiness is not subject to the up and down movement of the elbow (in bars) or anything else, a flattening of the sine wave of the emotions – that is, abiding joy. It would be difficult to find a more deeply thought-about definition of joy than that of Gautama Buddha. He says in the Dhammapada:

"Let us live in joy, never falling sick like those who are sick.
Let us live in freedom, without disease, even among those who are ill."

He goes on to say:

"It is good to meet the wise, even better to live with them.
But avoid the company of the immature if you want joy."

It took me twenty-five years to meet the wise and live with them, twenty-five years spent in the wilderness of immaturity, you look back and you think, O God, was that really me?

This is a book about trying to come of age, a book about finding the way back after having been there, I'm going to try to share with you my love for rock 'n roll and the insights it gives me from time to time, I'm going to explore with you the Way, the Tao and I am going to lecture you on how to design outstanding healthcare facilities in the context of the developing world. I hope to amuse and entertain you while doing all this.

Please feel free to let your mind boggle. Nothing like a good boggle a day to keep boredom away. This is not going to be an intellectual book. As any Buddhist will eagerly tell you, thinking sucks. Rather, I want to make you laugh and feel with me, because I believe that in laughter and getting in touch with our emotions lie what we need, stay awhile now and see.

Take a step with me.

So many books; so little time.

I have been a voracious reader since childhood, done the Enid Blyton's and then the Alistair MacLean's too, until one day browsing in the school library I pulled out from the shelves Part 1 of "*The Lord of the Rings*" by J.R.R. Tolkein. It was a book that changed my conception of what writing could be like and it catapulted me into a world in which fantasy became an escape route from my mundane life. I see the reading of this book now as a seminal event in my life; it set the tone for much of my thoughts and deeds later. When I returned Part 3 within a week, the librarian suggested "*To Kill a Mockingbird*" by Harper Lee. I never looked back after that.

Architects, by and large, are not readers. They are very visual people, photographs and drawings being what turns them on. I am not aware of a practicing architect who has written a book about anything other than architecture, but there are many architectural students who have gone on to sing and play some very good music, Art Garfunkel being a case in point. Simon and Garfunkel were the most successful duo of the 60s, 'The Sound of Silence' a track from the album *Wednesday Morning 3 A.M.* becoming their first hit. However, it was a song about an architect "So Long, Frank Lloyd Wright" that marked the beginning of the end, as musical differences and Art's acting commitments (in *Catch-22* among others), forced the duo to separate.

Architecture has been referred to as frozen music. Frozen music could be thought about or experienced as the sound of silence. One of the issues Zen Buddhism concerns itself with is the silence of the mind. The mind of the average architect, however, is far from silent; that of a schizophrenic one is a cacophony of sound.

Only through silencing this sound can one produce elegant architecture. One of the most important techniques in silencing this sound and thus being able to produce elegant architecture is not to take yourself and your work too seriously, to approach it with the mindset of a child. Laughing about architecture is better than philosophizing about it; playing with architecture is even better. Singing about Frank Lloyd Wright, however, might be carrying the technique a bit too far, and we have seen it did prove to be the last straw for the duo Simon and Garfunkel.

We started with: So many books; so little time. Can you see how far off that track we have come just by the noisiness of our minds, free-associating our way into the misfortunes of music lovers that were caused by the break-up of Paul and Art. So let us get back to the subject of books.

I have a book in front of me whose front cover says:

In the bestselling tradition of
Emotional Intelligence

Emotional Alchemy

How Your Mind
Can Heal Your Heart

Tara Bennett-Goleman
Foreword by H.H. The Dalai Lama

Back cover says:

In this groundbreaking work, Tara Bennett-Goleman shows how we can turn our confused and crippling emotions into the gold of insight.
The tool for this transformation is mindfulness. Through practicing this ancient Buddhist technique, we can begin to loosen the hold of those mental and emotional patterns that prevent us from being happy. We can start to enjoy our lives to the full.
Emotional Alchemy offers the principles of mindfulness alongside the very latest scientific research. Ultimately, this profound yet extremely practical book explains how the mind can heal the very heart of our being.

Anyone with a noisy mind needs to read this very good book. I would recommend it. She is a psychotherapist who has run successful international workshops on emotions for over 20 years. Contact www.randomhouse.co.uk

'The day paradise put up a parking lot…'

It's the refrain from a song titled "*Big Yellow Taxi*" recently popularized by Countin' Crows. They go on to sing:

'Took all the trees, put them in a tree museum
Charged all the people a dollar and a half to see them…
Now don't it always seem to go, you don't know what you've got till it's gone…'

The way we live, we certainly don't seem to. Listen to what Tadao Ando, a famous Japanese architect, has to say on the subject in the foreword to the book "*Architecture and the Environment: Bioclimatic Building Design*" by David Lloyd Jones.

"The whole world today harbors feelings of misgiving over the crisis facing the global environment and the general loss of our spiritual culture. Now, more than ever, it is time to return to our point of origin, to deepen our understanding of the environment and to correct our ways of mishandling the earth's forests and woodlands which play such an important role in shaping and developing the human spirit.

The cities of the twentieth century were built on a basis of function and rationality. Technological innovation and changes in social structure have caused an excess of people and things to become concentrated in urban areas. The entire world has generally shared the common belief that an economy-led society is the ultimate and desired direction. Driven by consumption, mankind has generated tremendous amounts of dynamic power, never before seen in our history, by converting the planet's irreplaceable fossil fuels and, in doing so, we have also released massive volumes of by-products into the air and the seas. We have also produced many non-biodegradable chemicals not found in Mother Nature.

The result of our attempt to use resources that have been the products of billions of years of solar energy within what is relatively a mere instant has been, conversely, to spew more substances and energy into the environment than the planet is capable of digesting, and this has thrown the entire global ecosystem out of balance.

All over the world we are finally beginning to recognize the threat that abnormal weather and pollution in the air, water and ground are posing to civilization. Economic development that wastes limited resources and destroys the environment brings only momentary prosperity; it lacks sustainability and threatens the very existence of future generations. Now is the time to change our consciousness in this regard and, focusing on solar energy, to come up with the appropriate means of utilizing our resources such as wind, water, and so on.

In the process of changing our ways, we should focus on the natural cleansing effects and the power of self-regeneration found within thick, foliated woodlands and learn to use these limited resources carefully under the guidance of the earth's ecosystems.

Though it is troublesome to make biodegradable goods and to utilize natural energy in our present ways of life, it is not impossible. We have already developed sufficient technologies to effectively utilize Mother Nature while sustaining her unspoiled beauty, and now is the time for the entire world to awaken to the limits of our materialistic ways and to change our society as a whole."

Architects have a special responsibility to society to take the lead by using environmentally effective design strategies. It is not only the bottom line of their client's balance sheet that is the primary design determinant. Ecological accounting also informs design. We need to trace the environmental impacts of design and use this information to determine the ecologically sound design possibilities.

Countin' Crows have something to say (sing) about this too:

'Hey farmer, farmer put away your DDT…
I don't care about spots on my apples, give me the birds and the bees…
Please…'

Which I would like to reaffirm: Please…

When superior people hear of the Way
They try hard to practice it.
When the middling people hear of the Way
They sometimes keep to it, and sometimes lose it.
When inferior people hear of the Way
They laugh at it.
If they didn't laugh, it would not be the Way.

TAO TE CHING

Inferior people laugh at more than the way. They laugh at paranoid schizophrenics. At least we think so, if we didn't we would not be paranoid schizophrenics. Middling people laugh sometimes, at other times they don't. Superior people don't laugh at paranoid schizophrenics. I can vouch for all of this through personal experience.

Is it all in my mind? I think a fairly large part of it is in other people's minds too, when confronted with behavior they don't understand, most people mock at it, making most people inferior by my definition above. Many of the people I have come across can be judged inferior by this applying this standard.

I think superior people don't laugh at paranoid schizophrenics because they recognize themselves. I know from personal experience they have never laughed at me, invariably there has been mutual respect. I know this statement sounds dangerously circular, a snake feeding on it's own tail. I propose in defense of my statement that all superior people dance to a different music, a celestial music, the music of the spheres. Likewise us crazies.

I have known for a long time now that when I die there will be a special place reserved for me at God's feet, where for some time, at least, there will be quiet, and no one will be laughing at me. Obviously, since I will be in the august company of God's chosen, yes, the spastics and the saints, who will welcome me to Heaven with open arms, coming as I am, like them, from Hell.

Peace.

In a Zen story, two monks approaching a river see a young woman who has no means of getting across. One of the monks carries her over and gently puts her down on the other side. On the way to the monastery, the other monk is so obsessed by what his friend has done that he can talk of nothing else. "A monk is not even supposed to touch a woman," he keeps saying, "let alone carry her around in his arms. What have you done?" Finally his friend puts an end to it. "I left that woman on the bank," he retorts. "You are still carrying her."

It is the mental state created by the experience that is important.

I am trying, O how I am trying, to put what I have picked up down. Like the story above illustrates, it is all about controlling your mind. The Buddha compares the degree of control of the average man over his mind to that of a charioteer trying to ride a chariot pulled by untrained and frisky horses. I am riding a chariot pulled by wild horses that have a hatred for mankind. And I need to tame and quiet them while journeying, and try to avoid that hatred being communicated to me through the reins.

More than any other common building type, healthcare facility design offers the greatest challenge to the designer, being functionally and technical complex and aesthetically more difficult, the building form resisting the efforts of the architect to massage it into something pleasing to the eye.

Deep satisfaction can be achieved through facing and overcoming savage adversity. That's one way, I'm sure there are others but I know not of them. I have a reputation for being stubborn, for doing things my way; I talk about living life on my terms. Doing the opposite of what others tell you to do is a symptom of schizophrenia. It is the way I have lived my life, an almost masochistic approach, denying myself simple pleasures that other people take for granted. In the bargain I think I have lived a more interesting life than many, less interesting than some.

But as Bob Dylan sings (albeit nasally), "…the times they are a-changin'…"
I see a glimmer in the distance, could it be dawn?

Introduction to Healthcare Facility Planning

Healthcare architecture differs from that of other building types in the complexity of the functional relationships between the various parts of the hospital. In residential and commercial building types the design brief is relatively easy to understand and cater to. Healthcare architecture, however, requires specialized knowledge on the part of the architect and the supporting engineering team. The lack of such trained professionals results in many of the hospitals in India today being ill conceived and costing their promoters much more in construction and in inefficient operation than they need to. Eventually it is the patient who bears the brunt of this incompetence through lack of quality in the medical care provided, physical and mental discomfort and increased cost of hospitalization.

Specialized healthcare architecture is a field that is still in its infancy in India. As pioneers in the field, Hosmac India Private Limited, Hospital Planning & Management Consultants (Mumbai, New Delhi) is uniquely positioned to advise its' clients. This advice is based on the combination of the skills and knowledge of our varied team of professionals, which consists of doctors, architects, engineers and hospital management graduates and the resource of an extensive database of information compiled over the years.

However, this specialized field is not only about satisfying the stringent functional demands that the hospital makes on its designer. The emphasis of healthcare architecture is also on improving the quality of the environment for patient and caregivers alike. It must meet the needs of people who use such facilities in times of uncertainty, stress, and dependency on doctors and nurses. It must recognize and support patients' families and friends by providing pleasant spaces. At the same time the building should project an underlying reassurance that the patient is in the hands of competent medical staff and in a technically sound healthcare facility.

In the future patients will be increasingly demanding of healthcare organizations. Those facilities that are designed to be most responsive to patients in terms of convenience, caring encounters, service orientation and the quality of care will do best in meeting these new demands.

Architects are regarded as talented problem solvers. The problem here is to find a way to deliver 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.

There was a healthcare facility design conference and three of the participating architects, a Roman Catholic, a Protestant and a Buddhist wanted permission to smoke.
"It's just a question of asking the right question," said the Roman Catholic.
"I'm going to ask the organizers if it's possible to smoke while I'm listening to the presentations," said the Protestant.
"That's no good at all," replied the Roman Catholic.
"The right question is, "Is it possible to listen to the presentations while you're smoking?"
"That wouldn't do for me," said the Buddhist.
"The right question is, "Is this a cigarette?"

Architects who think through design questions by going back to basics, taking nothing for granted, are more likely to find elegant answers to their questions.

When you are able to correctly define (or understand) the problem, the solution will be self-evident. But it is never possible to fully understand the problem in the unawakened state almost all of us are in. I know a management consultant who, when asked what he does for a living, says, "I provide solutions." But in this imperfect world, there are no solutions; all you can hope to do is to try to gain a better understanding of the problem.

Healthcare facility design poses some interesting problems for the healthcare facility designer. These problems are not of much interest to other architects, who look upon the field as somewhat technical and hence dry.

Believe me it's not a dry field. I have designed healthcare facilities every day and got drunk every night for years and years. A little soda and a lot of ice will make anything you add them to very wet. Cheers!

Green Tao

"If you wish to sustain your body in good health, take care of the world. Your body is part of the world; so you cannot abuse the world, and still expect your body to remain well.
By treating the world well, you can be at peace with it. By being at peace with the world, you can be calm. By being calm, you can follow the Way."

CHUANG TZU

"Well body, well earth" – a phrase originating in the United States – tells us that our health and that of the world around us are one and the same thing. The earth is like family, and that means we are committing incest in our times. There are no taboo's in today's' pursuit of happiness. Studied rapacity can be said to be the battle cry of material progress, bent knowledge.

"Food, clothing and shelter – *roti, kapda aur makaan*." The production of all three affect the ecological balance, but of the three it is shelter – *makaan* – that is the worst offender.

Consider the following extract from the "High Performance Building Guidelines", City of New York, Department of Design and Construction, April 1999.

Hidden costs of construction

The hidden costs of construction include the adverse environmental impacts of construction-related activities. Today's design decisions have local, regional, and global consequences. According to the Worldwatch Institute, almost 40% of the 7.5 billion tons of raw materials annually extracted from the earth are transformed into the concrete, steel, sheetrock, glass, rubber and other elements of our built environment. In the process, landscapes and forests are destroyed, and pollutants are released into the soil, water, and air. Twenty-five percent of our annual wood harvest is used for construction, which contributes to flooding, deforestation, and loss of biodiversity.

Operating a facility extracts an ongoing toll on the environment as well. Globally, buildings use about 16% of our total water withdrawals; in the US that amounts to about 55 gallons per person per day. Buildings consume about 40% of the world's energy production. As a consequence, buildings (among them healthcare facilities) are involved in producing about 40% of the sulfur dioxide and nitrogen oxides that cause acid rain and contribute to smog formation. Building energy use also produces 33%, or roughly 2.5 billion tons, of all annual carbon dioxide emissions, significantly contributing to the climate changes wrought by the accumulation of this heat-trapping gas.

Maybe you thought the language I was using above was strong. Do you still think so? Shelter is a basic human need, and we architects are the custodians of the social conscience as far as the building industry goes. Nobody else involved gives a damn. But most architects worldwide are sadly ignorant of even the basic principles of 'green' or 'sustainable' architecture (the inverted comma's speak for themselves.)

Let us hear from Lieh Tzu, a Chinese philosopher:

A craftsman carved a model of a mulberry leaf out of jade. The task took him three years. It's shape, veins, color and luster were identical to those of a real mulberry leaf; so when it was put amongst real leaves, no one could spot it. The craftsman presented the model leaf to the king. The king was so pleased that he rewarded the craftsman with a salary and a house.
When Lieh Tzu heard about the craftsman work and reward, he said: 'If the soil was so slow that it took three years to produce a leaf, trees would be almost bare. Let human beings do what they are destined to do.'

Are not most of us designers like the craftsman mentioned above, working for the approval of kings, conquering nature for salaries and houses.

Let us attempt to be calm, and follow the Way.
It's only natural.

Bounce

"I been knocked down so many times
Counted out 6, 7, 8, 9
Written off like some bad deal
If you're breathing you know how it feels
Call it karma, call it luck
Me, I just don't give a fuh…fuh…fuh…fuh…

Bounce,

Bounce Nothing's gonna keep me down
Bounce, Bounce Stand up, shout it out
Bounce, Bounce I play hard, I play to win
Count me out, count me in
I'll be bouncing back again"

Artiste: Bon Jovi **Album: Bounce**

I don't give one either, and I am working towards their being no ups and downs anymore at all, so in theory, at least, nothing's going to keep me down or up for that matter. I don't want to need to bounce anymore.

Jon Bon Jovi had a bouncy career, though.

(The albums) *Bon Jovi* (1984) and 7800 Fahrenheit (1985) were patchy efforts that nonetheless won respectable reviews and sales. Of more lasting value were the attendant tours and press coverage, which alerted the world to the singer's poster friendly features. The bandwagon was then joined by Desmond Child, who had honed a talent for whoa-hoing choruses with Kiss, headliners on Bon Jovi's first European tour in 1984. The result was *Slippery When Wet* (1986). Leaving no formula uncalculated, it sounded like Journey, Deep Purple, Aerosmith and Springsteen fed through a Pop mincer. Happily, it's appearance coincided with American hit radio having being softened up to hard rock by Cinderella and Def Leppard. Introductory single 'You Give Love A Bad Name' soared to US No. 1, followed by 'Living On A Prayer', and slippery became the fasted-selling album to that point. A marathon tour climaxed with a headliner at 1987's UK Monster's of Rock festival, where in 1985, they had languished in the middle of the bill.

Source: Guinness Rockopedia – The Ultimate A-Z of Rock & Pop

But at the end of 1990, Japanese gigs were perceived as the bands swan song. (What would this make of Jethro Tull's concert in Mumbai at Rang Bhavan? Minstrel in Mumbai? The dying squawk of a duck?). *"Keep The Faith"* in 1992 and *"Crossroads",* their best-of album, bounced them back to three nights at London's Wembley Stadium, not bad for a kid whose parents had him cut out for a career in hairdressing.

Sebastian Bach (of Jon Bon Jovi's pet project "Skid Row" fame), has the following questions to ask:

"I think Jon Bon Jovi should decide what he wants to be.

1. Is he in the Mafia?
2. Is he a cowboy?
3. Is he an Indian?"

Definitely a cowboy, Sebastian, I can hear hoof beats ahead…

Jon Bon Jovi rides a steel horse, "*and just like Butch and Sundance, may he ride unto the dawn, sipping whisky, singing cowboy songs…*

On the Right Side of Wrong." **(Album: Bounce)**

Saltwater

Julian Lennon

"We're on a rock revolving
Around a golden sun
We are a billion children rolled into one…
So when I hear about a hole in the sky
Saltwater wells in my eyes…

We climbed the highest mountain
We'll make the desert bloom
We're so ingenious we can walk on the moon…
But when I hear of how the forests have died
Saltwater wells in my eyes…

I have lived for love
Now that's not enough
For the world I love is dyinggg…
And now I'm crying…
Time is not a friend (no friend of mine)
Friends we're out of time
And it's slowly passing by aye aye aye…
Right before our eyes

We light the deepest ocean
Send for the drugs we want
We're so enchanted by how clever we are…
Why should one baby feel so hungry she cries?
Saltwater wells in my eyes…

I have lived for love
But now that's not enough
For the world I love is dyinggg…
And now I'm crying…
Time is not a friend (no friend of mine)
Friends we're out of time
And it's slowly passing by aye aye aye…
Right before our eyes

We're on a rock revolving
Around a golden sun
We are a billion children rolled into one…
But when I think of me the day that I die
Saltwater wells in my eyes…

Saltwater wells in my eyes."

Julian, that is such a beautiful song. I wish all the billion children on this rock that revolves around a golden sun get to hear you sing it.

Saltwater would well in their eyes.

Design Methodology - Speed of Working: 'Capturing the Violence of the Idea'

The French designer and architect, Philippe Starck, has a reputation for working extraordinarily quickly. He claims that while travelling by plane on one occasion he designed a chair during the period the seatbelt signs were on for takeoff. He says working at this speed allows him to 'capture the violence of the idea'.

In my experience of plane journeys, when the seatbelt signs are on for takeoff, the only thought in my mind is that of the discomfort and boredom of the journey ahead. Mr. Starck must be travelling first class, a design opportunity I have yet to experience. Having said that, I too subscribe to the idea of the design process at its best happening in a creative rush. I recently described the experience to a client (a psychiatrist) as akin to a cocaine trip. I think it made him just a little bit nervous as to who was (or would be) using whose professional services.

It is commonly held that creative work is characterized by periods of intense activity interspersed with times of quieter, more reflective contemplation. I confirm this as being my experience too. Some architects have described the periods of intense activity as being like juggling. They speak of the need to oscillate very quickly between the many issues with which an architect must be concerned. To take your mental eye off any of these issues is the equivalent of dropping a ball. This kind of concentration is extremely intense and difficult to maintain for long periods. I agree. Every evening, after a hard day's design, I feel the need to contemplate seventies and eighties rock and roll, best seen through the bottom of a glass.

As Richard MacCormac (of MacCormac, Jamieson and Prichard, Architects, fame) puts it "one couldn't juggle slowly over a long period". This analogy, I think, describes the skill perfectly. I have found this to be one of the skills young architects find most difficult to acquire. However, they excel at endlessly debating within themselves a minor facet of the design. Each to their own, as I have always said.

Richard Burton, of the architectural firm Ahrends, Burton and Koralek, shares this view. He feels the design process must work very quickly; this follows from his insistence that no one aspect of the problem should dominate. From his teaching and examining experience he identifies a failure to work quickly enough as one of the problems facing students trying to develop their own design process.

Michael Wilford, (previously James Stirling's partner) refers to the "skill of prioritizing the stages at which certain inputs are valuable as distinct from an impediment to the process". Creative inputs on design issues when construction documents are being prepared are not always welcome to those preparing the construction documents, and these fine people too are critical to the overall scheme of things, and must be kept happy. It's not just about juggling, but also about knowing which balls to pick up, and when!

There is also the need to contrast the intensity of working in the group within the office with quieter periods of solitary contemplation. The need for longer periods of quiet reflection as well as the intense periods explains why the design process cannot be hurried and compressed without considerable loss of quality. Certainly, it has not been my experience that the quickest and cheapest design process will give rise to the most desirable result. (Imagine trying to juggle too many eggs too fast). (Undesirable results!).

In fact, bearing in mind the small part of the total cost of a building that goes on the design process, this is an entirely fallacious and counter-productive notion!

Dr. Santiago Calatrava, one of an extremely rare breed of architect-engineers (he studied architecture at the Escuela Tecnica Superior de Arquitectura de Valencia in the Spanish region of Valencia and then moved to Switzerland to study civil engineering in Zurich), believes that design should have a 'freshness and spontaneity'. He says this comes from working rapidly and intensively at certain stages of the design process. He talks about the tensions between the intense and relaxed periods of design and between the need to fight for the idea and yet allow criticism of it. 'On the one hand it needs a lot of spontaneity and on the other it needs perseverance.'

Dr. Calatrava has been awarded the Gold Medal by the Institute of Civil and Structural Engineers.

Way to go, Doctor! They need to be shown the light.

Although Dr. Calatrava is undoubtedly a great artist and his work is highly personal he is not frustrated, as might be expected by a process that necessarily involves so many other people. He thinks the architect should transmit a vision of something. I think it is very much about seeing and showing the Path, the Way. Great design is about seeing the Light. And it's not like it needs to be approached with the seriousness of a religion. As I have said before, and intend to keep saying, it is all about having fun.

The Boss, Bruce Springstein, wrote a song, which was made famous by Manfred Mann and his Earth Band. It was called 'Blinded by the Light', and somewhere in the middle it goes like this:

"Mama always told me not to look into the sights of the sun…"

There is a pregnant pause in the music and then the next line goes:

"But Mama-a-a, that's where the fun is…"

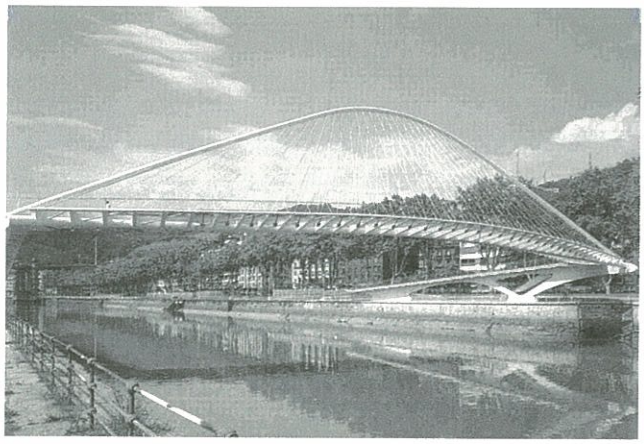
The refrain goes:

"Blinded by the light…"

Oh well, that's neither here nor there. It's just a casual aside, lyrics from a song I heard years back. Our circumstance has changed since then. Do you think half-forgotten rock 'n roll lyrics can define a vantage point from which to view the world? The first ten correct answers will get their originators a CD of the Grateful Dead titled "American Beauty" (…"American Reality"?) as a prize. So think hard.

To get back to Dr. Calatrava; he too speaks of the idea being not inside but outside him as some sort of distant light which offers a target or focus for the process. For him the design process is largely linear. He does not normally believe in exploring alternatives and seems to arrive at the basic idea of a scheme fairly early on. For him this starting point can be remarkably fundamental. "Sometimes it is just a gesture or an idea perhaps about equilibrium, for example.'

I like to think that maybe sometimes it could be a funny thing that happened to him on his way to the office, for example.



Santiago Calatrava, Pasarella de Uribitarte,
footbridge over the river Nerbio, Bilbao, 1993.

Santiago Calatrava then represents a fusion of the worlds of the civil engineer and the architect. He claims that his imaginative structures do not necessarily cost more to build but admits they might take longer to design. He feels that to design too quickly and only to look for the cheapest solution is both short-sighted in that this can destroy important landscapes, and is often not an economical policy in terms of lifecycle costs. Most of his work has been commissioned by public authorities that have been convinced by these arguments.

What I think he is saying is that you can make a good omelet without necessarily breaking (or juggling) a whole lot of eggs, if you do it with care and cook it over a low flame.

Present and potential clients please note. Let us designers simmer.

Modernity's Effect on Healthcare Architecture in the 20th Century: Dignity and Disaster

By **Hussain Varawalla**

What is Modernity?

In our postmodern and deconstructivist world of today, there have been many answers offered to this question. The majority of them have been negative. It has been said that Modernity marked the death of God, as trumpeted by Friedrich Nietzsche, the German philosopher. It is said to have made life into just another commodity, it has been credited (or more correctly, debited) with the leveling of qualitative distinctions, the brutalities of capitalism with it's emphasis on quantity, the loss of value and meaning in the lives of most people, existential dread – all of which have been summarized in the phrase made famous by Max Weber: "the disenchantment of the world."

No doubt there is some truth in all these claims. But modernity has some very positive aspects as well; it has given us the liberal democracies, the ideals of liberty, equality and fraternity, regardless of race, class, creed or gender; modern science; the end of slavery and the rise of feminism and the concept of universal rights for all human beings. Surely these achievements are more noble that the mere "disenchantment of the world."

What we need, then, is a specific description or definition of modernity that allows for all of the above factors, both good and bad.

Different writers on the subject, from Max Weber to Jurgen Habermas, have suggested a specific definition for modernity as the "differentiation of the cultural value spheres", which specifically means the differentiation of the respective fields of art, morals and science. Where previously these spheres tended to be fused, modernity differentiated them and let them develop individually at their own pace and with their own dignity.

What do we mean when we say that previously these spheres of human activity were fused? Surely they were always different fields of endeavor? Premodern cultures certainly possessed arts, morals and science. The point is that these spheres were 'undifferentiated." For example, in the Middle Ages, Galileo could not freely look at the heavens through his telescope and report the results as the fields of arts, morals and science were all fused under the Church, and thus the moral teaching of the Church defined the boundaries of science – the Church's official line was that the sun went around the earth and that was the end of the discussion.

However, with modernity's differentiation of the value spheres, a Galileo could state his case without fear of being charged with heresy or treason. Artists could paint non-religious or even sacrilegious themes without fear of punishment. And moral theory was free to pursue any line of inquiry it pleased, whether it was OK by the Bible or not.

For all these reasons and more, the *differentiations* of modernity have been referred to as the *dignity* of modernity, for they enabled, for example, the advances in science and technology, individual freedoms guaranteed by the constitutions of liberal democracies and the vast palette of styles in the fields of art and architecture.

The bad news, however, which modernity brought along with it, was that these value spheres did not just peacefully separate, they sometimes flew apart completely. The desirable *differentiations* overflowed into actual *disassociation*, fragmentation, and alienation. The growth became a cancer and dignity became disaster. This disassociation allowed a powerful and aggressive science to invade and dominate the other spheres. Science became scientism – scientific materialism and scientific imperialism – that soon became the "official" world-view of modernity. Science denied any validity to qualitative spheres such as religion, which made claims unverifiable by science. Classic variations on this theme have been given by Sigmund Freud, Karl Marx and Bertrand Russell, the champions of this world-view.

Will and Ariel Durant's description of modernity as the "Age of Reason and Revolution" is as good a summary as any.

Modernity, Industrialization and Architecture: The Dignity

At the beginning of the 19th century, in prewar Germany, the forces for reform used industrialization and mechanization to turn out well-designed, high-quality products, as well as to achieve a new style in architecture, more appropriate to their Brave New World. The combined economic and artistic strivings of industrialists, artists and craftspeople came together in 1907 in the *Deutsche Werkbund* (German artwork union). The Werkbund's program setting exhibition, held in Cologne only a few weeks before the outbreak of the First World War, offered an overview of the various architectural currents of the time. Hermann Muthesius, an important architect, demanded a thoroughgoing move to industrial production, even of products that were traditionally handcrafted, and in this he included architecture. His views triumphed over those who held out for a strongly individualized and more craft-oriented direction. Scientific materialism prevailed over Romanticism, the first strong reaction to the disaster component of modernity, which advocated a return to a pristine and "fused" past.

The outstanding architectural event of the Werkbund exhibition in Cologne was the Glass Pavilion by Bruno Taut. A year earlier, in 1913, taut had produced a monument to iron in the steel industry for the building exhibition in Leipzig, which served as a model by means of its use of new forms and materials. Instead of historical ornamentation, the monument showed an exemplary respect for its materials. Even from the outside it was a textbook example of building in iron.

It was these same principles that gave its exceptional quality to a factory for making shoe-lasts, the Fagus factory designed by Adolf Meyer and Walter Gropius (1911-1913). It is regarded as one of the founding buildings of the 20th century Modernist architecture.

The models for these new factory buildings with their functional, technical language of forms were American silos and industrial buildings, whose persuasive functionality was now increasingly recognized to have an aesthetic dimension. Also influential in Europe were the factory buildings with concrete skeletons that Albert Kahn and the engineer Ernest Ransome built for the industrialist Henry ford's thrusting new automobile works in Detroit. Henry Ford's recipe for success was signal in its modernity. Mass-produced parts, a rational work flow, the increased division of labor and the resultant low production costs all contributed to making Henry Ford one of the most successful car makers of his day.

Kahn's buildings reflect this sternly economic point of view with their total renunciation of display, being soberly cubic in form and without any superfluous decoration. The production sheds with their conveyor belts were rationally designed, laid out all on one level, and were notable for their bright interiors, full of natural light coming in through large windows set into the supporting concrete skeleton.

This contribution of architecture towards the development of the economy and improving working conditions for the labor force through the application of scientific principles is a part of the dignity brought by modernism, in its avatar of scientific materialism, to society at large. We go on to see how modernity establishes itself as an architectural style underpinned by modernity as a philosophy to live your life by.

The International Style: A Prelude to the Globalization of Modern Architecture

The First World War was the defining experience of an whole era. Modern weapons, such as tanks and aircraft, had been brought to a high degree of technical perfection, and were employed for the first time. As a result of the war, the generalized deprivation that had struck whole areas of the population was a challenge to artists and writers, as well as to politicians. At this time, artistic and political programs went hand in hand with the aim of changing the face of the world and the ways of being that it offered.

In architecture too, there was a thoroughgoing drive to develop functional new ways of building and to use new building materials: glass, concrete and steel. The new more rational and economical building methods were not just an expression of the spirit of the times. They had a definite social component, especially when applied to the housing developments that were carried out with a great deal of urgency to address the problem of homelessness. From1920 to 1930, following the disaster of the First World War, an undreamed of period of revolt and euphoria broke

out. A new, more relevant architecture, which was backed by social purpose, joined the cityscapes.

In 1927 the *Deutscher Werkbund* organized a building exhibition in the Weissenhof housing development in Stuttgart, which highlighted what was newest in the architecture of the day. Practitioners of Modernism such as Le Corbusier and Jacobus Johannes Pieter Oud and German architects such as Scharoun, Gropius, Behrens and Mies van der Rohe were given a forum in which to present the new building styles and their rationale systematically to the public. In the few years since the First World War a completely new architecture had developed and in the Stuttgart Weissenhof estate it became clearly evident for the first time that this was not a specific style with a regional stamp, but a worldwide development.

Faced by the rapid worldwide triumph of the new building style exemplified by the Weissenhof estate, it is not surprising that it was christened the "International Style" by the architectural critic Henry-Russell Hitchcock on the occasion of an exhibition of recent Modernist architecture in the Museum of Modern Art in New York in 1932. The International Style conquered almost the whole world in the years before the Second World War. With its cubic units in cement, steel and glass it unified the visual aspect of cities, and dominated almost the whole of architectural development right into the 1960s.

After the Second World War, shattered countries had to be rebuilt, and the International Style, which carried no undesirable political overtones, came into its own, especially in America. Reinforced concrete and glassy facades became the hallmarks of a new era. From South America to Southeast Asia, architecture took on a unified style, which put its stamp to a greater or lesser degree on all cities, sometimes pushing regional architectural forms into the background, or causing them to disappear from the profile of the city altogether.

This was the beginning of the disassociation, worldwide, with these concrete, steel and glass towers that were coming to symbolize to society at large the gross materialism of the driving ethos, the "disenchantment with the world" with relation to the prevalent architecture. The huge utopian modernist housing projects alienated the very inhabitants they were designed to house. These planned utopias turned into wastelands of graffiti, vandalism and neglect. Thus in the late 1960s and early 1970s some of them were dynamited. In fact, an architect named Charles Jencks, in a public lecture, proclaimed that on July 15, 1972, at 3:32 PM, modern architecture died, as a huge housing project in the city of St. Louis was blown to smithereens.

The utopian, progressive elements of architectural modernism were increasingly criticized by architects who felt the need to integrate painting, sculpture and graphics with architecture, a tradition that the Modernist architects had rejected. Modernists, in idealizing the well-engineered forms of transatlantic steamships, American grain elevators and Cubist paintings had ended up creating buildings that symbolized a Brave New World of science and technology to the exclusion of the other two differentiated value spheres, art and ethics. Their buildings had come to symbolize the power of a technocratic elite, an invading scientific materialism (or "Truth') establishing its hegemony over 'Beauty' and 'Goodness', so that art and ethics could not pursue their individual aspirations without dominance or violence from science in the built form of our world today.

This was the disaster.

Healthcare Architecture in the 20th Century: The Dignity and the Disaster…

Le Corbusier, a famous Modernist architect, talked of a house as a "machine for living in".

If Le Corbusier had been a healthcare architect, maybe he would have talked about designing hospitals as "machines for healing in".

We are aware of the complexity of the functional needs of a modern hospital, and the specialized knowledge needed by its designer with respect to its engineering services and the needs of the medical equipment it houses. So we can see how a hospital, especially one being built in the new millennium, could well be considered to be "a machine for healing in".

In fact, many (if not most) of the hospitals built in India during the latter part of the last century seem to have been designed to provide a roof over the increasingly complex medical procedures

being performed within, with their architects being little more than "doctor's draftsmen", translators of medical and technological requirements into built form. Grim and cheerless buildings that cannot be dignified with the word "architecture".

The concept that what works well will of necessity look well has been the lame excuse for all the sterile architecture, furniture and implements of the twenties and thirties. The international style let us down rather badly in terms of human value. "Should I design it to be functional," the students say, "or to be aesthetically pleasing?" This is the most often heard, the most understandable, and yet the most mixed-up question in design today. "Do you want it to look good or to work?" Barricades are erected between what are really just two of the many aspects of function.

In the developed West, the health landscape is littered with the buildings of the 1960s and 1970s – eight to ten floors of narrow inpatient units stacked vertically on a podium accommodating diagnostic, therapeutic and interventional services. (While this building form was, in part, a response to the physical crowding of urbanization, it was also, in part, a phallocentric need of the technocratic elite who made such decisions. Putting a "man" on the moon was the logical conclusion to this need.)

The inherent problems of vertical organization, and particularly of a tower block of wards, is that of a limited envelope with no means of lateral expansion. The considerable portion of each floor taken up by lifts, stairs and service shafts, is not only inherently wasteful and expensive; it also makes the plan form more rigid, and inhibits subsequent alteration. Growth of a vertically organized hospital tends to take the form of clusters of smaller blocks at its base, with increasingly difficult service and circulation routes.

The advantage frequently claimed for tall hospitals is that they occupy less land. This is only valid for inner urban hospitals, such as the (moderately) tall Chelsea and Westminster Hospital, London, where the floor area is similar at all levels. The commonest type of tall hospital, especially in the USA, is the "tower on podium" form, popularized by Gordon Friesen with his mineworkers hospitals, and based on a production engineering principle of supplies fed the wards from a basement service center. The podium of these hospitals usually spreads to occupy a site similar to those of compact low-rise hospitals. The flexibility limitations of such hospitals become more evident as the proportion of the total built volume comprising wards is tending to diminish.

The tower and podium form is common in other building types, notably – and for similar reasons – hotels. Lever House in New York had a great influence, and not only on other office buildings. Although the earliest Friesen hospitals pre-date Lever House, the prevalence of hospitals of this form in the USA from the 1950's onwards may be partly attributable to this much admired "classic" of modernist architecture.

It is arguable, however, that hospitals, with their functional complexity and unknown ultimate form, are more suitable for the alternate organic stream of modern architecture, typified by Frank Lloyd Wright, Aalvar Aalto and Hans Scharoun, than for the purist geometry typical of Mies van der Rohe and his followers. It may be significant that Aalto's Paimio sanatorium is the only hospital among the undisputed masterpieces of modern architecture.

Hospitals designed during this period, the latter part of the 20th century, were, by and large, physical manifestations of functional health planning diagrams, with little or no regard to an appropriate architecture or to site and context issues. Sarita Chand, a principal in the Australian design firm Bligh Voller Neild says: "The reasons behind this sorry state of affairs are not hard to diagnose. Even with the best design intentions in the world, architects get overwhelmed by the sheer complexity and "hard" functional issues of a hospital brief…But these issues, daunting in themselves, are not the only reasons for the unacceptable state of much hospital architecture. The real issue, in my opinion, is that little value is attached to the architectural quality of the hospital – to amenities such as natural light, views, way finding devices and public spaces. Instead, process-driven managers, under the guise of cost-rationalization, drive their obsession with statistics – area-per-bed, room areas, circulation percentages and so on – to such a level that they become the main criteria for the assessment of hospital design."

The inroads of scientific materialism into its sister fields of art and ethics! An almost incestuous rape, the humiliation and abuse of the marginalized! Our hospitals and cities became one-dimensional flatlands of the Gospel according to science, or "Truth", lacking the emotional and

spiritual depth of art and ethics, or "Beauty" and "Goodness". Lewis Mumford so memorably called this the disqualified universe: a world lacking in quality and meaning, governed not by spirit or consciousness or purpose or meaning, but by the teachings of the prophet Werner Heisenberg, ruled by blind chance and systems necessity, with the blind leading the blind, and one-eyed (read: "one-dimensional") men as kings.

This then was the disaster. What of the dignity?

Modernity, with respect to health, provided with the field of endeavor of modern medicine, as we know it today. Advances in science and technology enabled building construction methods and materials and building services such as plumbing, electrical systems and air-conditioning and air-filtration systems without which our contemporary hospitals would be crippled. Medical equipment has reached a mind-boggling degree of sophistication, both in the fields of diagnosis and treatment. The "Black Death" of the premodern world, plague, has been eradicated, and cures have been found for illnesses such as malaria that previously caused widespread suffering.

All this was made possible by the "differentiation of the value spheres" that we spoke of earlier, enabled by modernity (that is, the events set into motion by the liberal Enlightenment.) This differentiation is the essence of the dignity modernity conferred on our world.

It is this dignity of differentiation that the anti-modernity critics often miss, because they confuse differentiation with disassociation. If differentiation goes too far, the result is disassociation or fragmentation. The process gets out of control, and the various subsystems cannot be easily integrated; they fly apart instead of fitting together, and the result is pathology, repression and alienation, the ills of our modern world.

Premodern cultures did not have this disaster precisely because they not possess the corresponding dignities either. The cure for the disaster of modernity is to address the disassociation, not to attempt to erase the differentiation, as many narrowly focused postmodern philosophies try to do.

This disassociation, this disease, this developmental pathology – is of profound significance in attempting to understand the ills of the modern world. All of the higher levels of human consciousness and endeavor were scrubbed from the face of the World, being adjudged meaningless and thus marginalized by scientific materialism, leaving dirt and dust, systems and sand, matter and mass, objects and its. A cold, uncaring wind, one-dimensional in its method and calculated in its madness, blew across a flat and faded cityscape, the cityscape that now contains, as tiny specks in its alleys, the faces of you and me.

Saltwater

Julian Lennon

"We're on a rock revolving
Around a golden sun
We are a billion children rolled into one…
So when I hear about a hole in the sky
Saltwater wells in my eyes…

We climbed the highest mountain
We'll make the desert bloom
We're so ingenious we can walk on the moon…
But when I hear of how the forests have died
Saltwater wells in my eyes…

I have lived for love
Now that's not enough
For the world I love is dyinggg…
And now I'm crying…
Time is not a friend (no friend of mine)
Friends we're out of time
And it's slowly passing by aye aye aye…
Right before our eyes

We light the deepest ocean
Send for the drugs we want
We're so enchanted by how clever we are…
Why should one baby feel so hungry she cries?
Saltwater wells in my eyes…

I have lived for love
But now that's not enough
For the world I love is dyinggg…
And now I'm crying…
Time is not a friend (no friend of mine)
Friends we're out of time
And it's slowly passing by aye aye aye…
Right before our eyes

We're on a rock revolving
Around a golden sun
We are a billion children rolled into one…
But when I think of me the day that I die
Saltwater wells in my eyes…

Saltwater wells in my eyes."

Julian, that is such a beautiful song. I wish all the billion children on this rock that revolves around a golden sun get to hear you sing it.

Saltwater would well in their eyes.

Circulation: A Critical Issue – Conceptual Clarity & Ease of Wayfinding

'Circulation' is defined by the Merriam-Webster's Collegiate dictionary as: "orderly movement through a circuit; *esp:* the movement of blood through the vessels of the body influenced by the pumping action of the heart."

So we have our medical analogy, though a hospital is often compared to a small city, I've never heard or read a comparison to the human body. We do, however speak of the 'pulse' of a city, and it's 'major arteries'. But we are wandering; let us get back on track.

In the above definition, 'orderly movement through a circuit', the word we should pick up and focus on is 'orderly'. It implies purpose, and purpose implies design. We are going to talk about the importance of the design of circulation in a healthcare facility.

Hospitals, like the small cities they are likened to, contain main circulation routes often described as hospital streets. The way in which the different parts of the hospital are assembled, as a coherent whole but with the parts differentiated, make for analogies with urban design; the way in which traffic moves, and the routes that are taken by mechanical and electrical services are fundamental generators of the plan.

In a vertically stacked hospital, which could also be called a functionally stratified hospital, almost always the inpatient areas are placed on the upper floors, to allow for a more pleasant, naturally lit environment. The planning grid for the hospital is determined by the layout of these inpatient floors. Another important planning feature, the vertical circulation core, is also to some extent located within the building by the layout of the inpatient floors. Usually, in vertically organized hospitals we design "from the top down", that is, we design the inpatient floors first. What we actually do is during the layout of the inpatient floors, we provisionally decide on a position for the vertical circulation core and other staircases that may be required, many times by the local building codes. This location, however, is to be checked for it's design impact on the lower floors containing the diagnostic / therapeutic / interventional departments.

The pattern of circulation conceptualized for the hospital under design will be considerably impacted by the location(s) of the vertical circulation core(s).

It's something like all roads leading to Rome(s). The vertical circulation core is the center, the focus of all the major circulation paths of the hospital. An attempt can be made through design to minimize vertical transportation by siting (for example) all surgical beds, operating theatres and the intensive care unit on the same floor. This design approach may be used as a justification to reduce the number of elevators, or the width of the staircases, but in no way does this mean that the core can be located more casually by the designer.

Avoidance of dependence on lifts is particularly important in places where maintenance and availability of spare parts is unreliable; long waits for lifts are a major cause of inefficiency and frustration to hospital users – more of a problem the taller the building is.

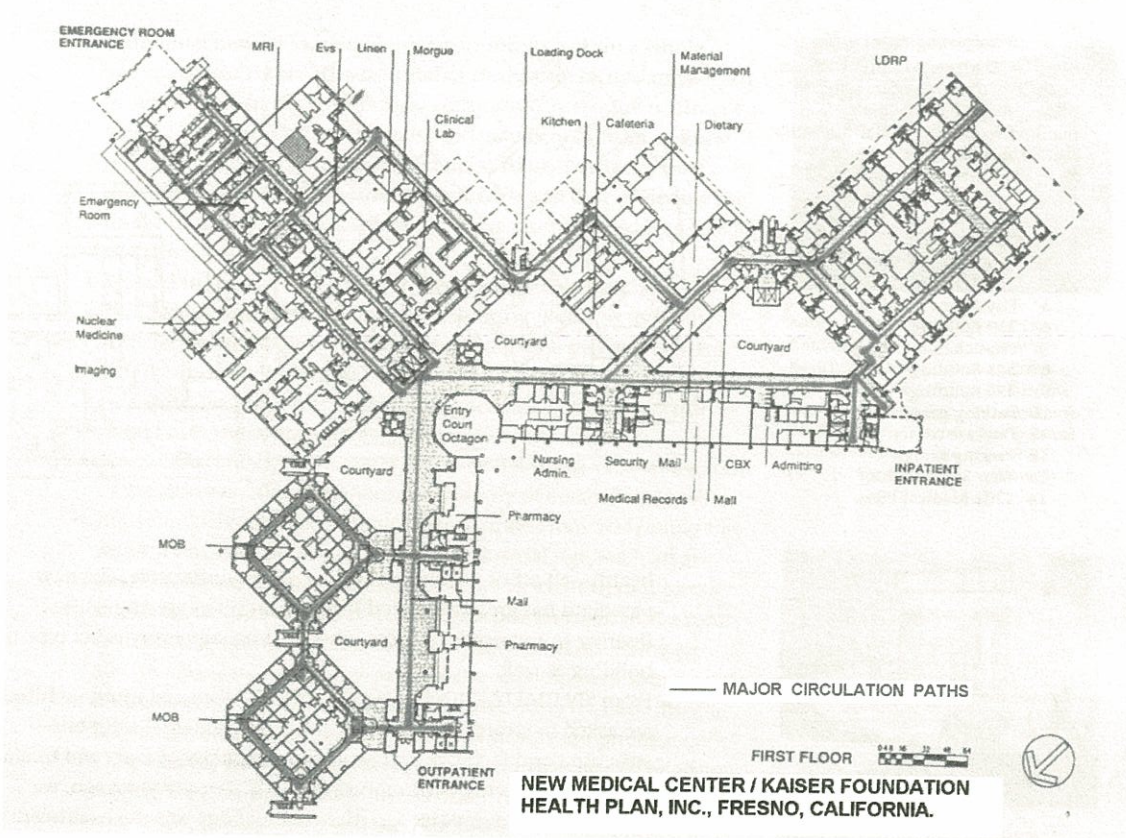
It is important that patients, visitors and staff are enabled to orient themselves while moving through the hospital by providing windows in corridors to enable them to look out and to allow natural light in, important in alleviating the tedium of long corridors. If the site enables them, courtyards are also an excellent means to this end.

As such there is no easily available prescription for the way the circulation pattern for a healthcare facility should be. The qualities it should possess, however, I will try to enumerate:

1. It should have conceptual clarity. By this I mean it should be designed with purpose, and should not be leftover space or squeezed into the gaps between other areas. Geometry can be a recourse, but it should work with other planning imperatives, and junctions should be

uniquely treated to avoid confusion over which corner of the hexagon (for example) you have reached.

2. It should not be boring. Try to make walking from one place to another interesting, modulate those corridors, color them differently, hang artwork along the way. Niches, outside views, courtyards, all these will help.
3. It should enable wayfinding. In combination with well-designed signage and maybe supergraphics, people should be able to find their way to their destination with ease. Color-coding for floors or departments is sometimes used.
4. They should be wide enough to handle anticipated traffic. Stretcher traffic needs 8'-0" width of corridor for easy movement (turning). 7'-0" will work, but use 8'-0" if you can. Corridors between Operation Theaters make sense even with 10'-0" width. There may be a lot of stuff parked along the sides, despite instructions to OT staff to the contrary.
5. They should be indirectly lit. Patients on stretchers get to look at the ceilings. The sign put up by the traffic police at the end of Marine Drive in Mumbai says, "Drive carefully. Hospital ceilings are boring." While not advocating rash driving, we would advocate making the ceilings interesting.



Shown above is a nightmarish example of clarity in circulation layout at a hospital in Fresno, California. Hopefully neither of us will ever need to visit a patient who is a loved one in this hospital, for it is in this tense and anxious state that clarity in circulation paths is most welcome.

In tense and anxious moments, there is another 'path' that can be of help, and that is the path of the Tao. It is a form of thought founded in the same period as Confucianism, by a thinker often known as Lao Tzu or "Old Master'. The basis of the Tao is a form of reality that is unnamable. The funda is that the nature of reality is unaffected by our ways of trying to grasp it, and although we may use concepts to make sense of that reality, we should be aware that reality is completely undifferentiated. As

function the Tao advocates *wei wu-wei*, which is the avoidance of contrived action, especially action brought about through attempting to achieve an end.

It is not so much what we do as the way we do it.

A Chinese sage, Zhuangzi, best known for a book of the same name, has provided a particularly clear account of Taoism, illustrated by some delightful images. There is the famous story of how he dreamt he was a butterfly, and when he woke he wondered whether he was Zhuangzi dreaming he was a butterfly, or a butterfly dreaming he was Zhuangzi.

He goes on to say what the sage needs to do is first acquire knowledge and then set out to forget it. (This has some resonance with the reading of this book to gain funda on healthcare architecture, and then regurgitating that funda, as mentioned earlier, being the proper way to learn anything. The important bits leave their traces behind, right?) Zhuangzi goes on to say that what sages need to recover is the point of view of children and the ignorant. (Spontaneity being all-important, I guess?)

All he hopes for will happen in society is that each individual will achieve the level of happiness appropriate to him or her, through following the natural path for that individual.

We can only conclude that if Zhuangzi were to find himself in the New Medical Center at Fresno California, at the Outpatient entrance, trying to find the MRI to get a full body scan done, the Tao (or 'Path') to his goal would be unnatural, and he may find it difficult to achieve the level of happiness appropriate to him. The signage in English and Spanish would be Greek to this Chinese sage. (Excuse me, no racial slurs intended, some of my best friends would speak Spanish if they only could.)

Having been an Indian in California, I have been on the receiving end of English slurs. Peace. Let us return to discussing circulation paths in healthcare facilities, in India, for a change.

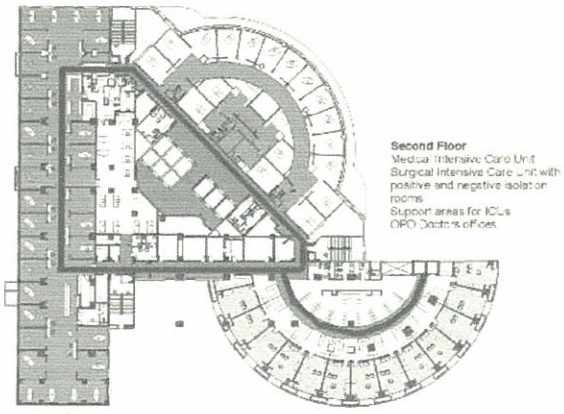
Some of the hospitals currently existing in India have been provided with ramps in addition to the usual elevators and stairs. Power cuts are realities that have to be considered. But consider putting some (two) of the elevators on a generator, if this helps in avoiding the ramp, which is wasteful of space and difficult to use, as the gradient is often excessive. (With an acceptable gradient, the length becomes excessive, considering that the lower floors of hospitals are considerably higher than those of the usual non-hospital building.)

When planning for the area occupied by this circulation space (corridors) in the architectural space plan, it can be provided for as a percentage of the department area (usable, built-up area). This percentage will vary depending on the department and may also vary if the architect has any special feature in mind for that department which is not explicitly provided for in the room-by-room area statement (such as semi-covered, landscaped waiting). The percentage can vary from 35% for an Operation Theater Suite (with 8'-0" corridors) to 20 – 25% for the Administration Department.

On the inpatient floors or even in the outpatient department, these corridors can be modulated by recessing pairs of doors that occur at regular intervals, and using an accent color in the niche so created. This helps relieve the boredom of walking through long, uninteresting corridors.

Very frequently the major circulation paths through the hospital are laid out even before the tentative space allocation for the hospital departments is done. Thus, the importance of conceptualizing these paths in a way that they contribute to the concept and functional layout of the hospital is not to be underestimated, the exercise should not be done casually.

Frequently the manner in which the healthcare architect conceptualizes the working (and therefore layout) of certain hospital departments, notably the Operation Theater Suite and the Radiology & Imaging Sciences Department will determine the circulation pattern through that department, and hence affect the layout of circulation paths in contiguous areas of the hospital.

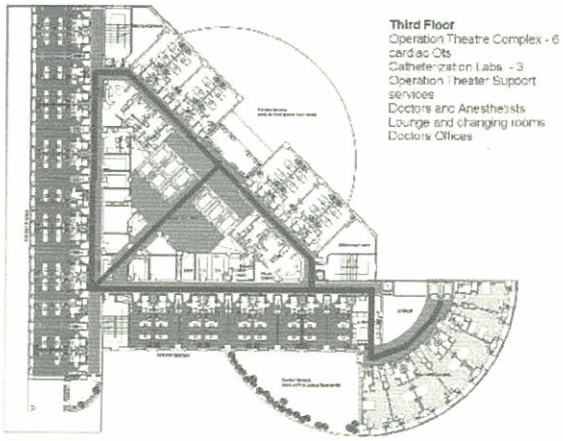


On the left is a plan of one of the lower (podium) floors of the Asian Heart Institute & Research Center, a dedicated cardiac care hospital I have designed, at the Bandra-Kurla Complex, an upcoming commercial hub in Mumbai (Bombay), India. It is a fairly good example of a "tight" circulation pattern, achieved by "looping" the corridor as shown by the thick line. This has obvious advantages over the 'alphabet architecture' that is the hallmark of most Indian hospitals, 'U's, 'H's and 'E's!

Below is the plan of one of the inpatient floors of the same hospital, showing the advantages of "shorting" the loop.

Frequently we healthcare architects find that in the areas below the footprint of the inpatient tower in the podium, we end up using the same corridors that we used in the inpatient floors. (I find myself doing this quite often. There must be a good reason for this; at least I hope there is! Beats me if I can think of it though. Maybe you can think of one.) Taking the easy way out? Aaaaahh...lets not let the laymen know!

Defining major circulation paths through the proposed and future buildings is a design decision that will considerably impact the form, layout and thus the eventual functioning of the healthcare facility being designed. Do it thoughtfully and with conceptual clarity.



Schizophrenia and Healthcare Architecture in A Designer's Life: Genius or Madness?

Great wits are sure to madness near allied,
Thin partitions do their bounds divide.
John Dryden, *Absalom and Achitophel*

There is evidence to show that people with a diagnosis of schizophrenia tend to perform badly on a whole range of psychological tests, particularly those that require a novel and flexible approach. How is this compatible with the widespread belief that there is a close relationship between madness and genius? The most characteristic feature of the genius, in particular the mad genius, is the novelty of his or her contribution to art or science. Yet the kinds of tests on which patients with schizophrenia do badly are precisely those that require a minimal degree of creativity, like the verbal fluency test. Is it possible that some of their executive problems can actually give rise to creativity? Perhaps a special kind of creativity arises from seeing relationships where the rest of us see none or from making responses that we suppress because we think they are inappropriate.

In 1982 (I think, my recollection of that time is fuzzy) I was working in the studio of Uttam C. Jain, an internationally renowned architect, in Mumbai. I was working on finding a design solution for a proposed resort hotel in Goa, but was unable to concentrate on what I was doing because of a stream of abuse directed at me from a man who occasionally leaned out of a window in the building facing our studio. It was making me tense and self-conscious. During one of Mr. Jain's half-hourly rounds of the studio, I complained to him about my inability to find a starting point for the design of the hotel I was attempting. Without saying a word he started looking for a pencil among the clutter on my drawing board. Not finding one immediately, he picked up a compass (the kind we architect's used to draw circles with before IBM and AutoDesk made them unnecessary) and with the pointed end he scratched a wriggly line on the polished surface of my table, and went away. For a heartbeat I looked at it with total incomprehension, and then in an almost physical jolt of insight I saw the design direction I was looking for. For years after that I related this story to bemused friends lauding the design skills of Mr. Jain, until one day the second insight informed me that he didn't have the faintest idea of what he intended by that squiggle, whatever I saw in it was my own construction. At the time I worshipped the ground he walked on, he was my design guru, and *could not* produce meaningless squiggles in response to such an important question.

At some time during the four years I worked in his office I had what was publicly referred to as a 'nervous breakdown', privately diagnosed as paranoid schizophrenia.

Almost 25 years later, I am intermittently hearing someone abusing me from the street outside the window of my bedroom where I am writing this. Nowadays it makes me less tense, and less self-conscious. Finding design directions have become simultaneously effortless and totally unimportant as questions, as I now realize there are no solutions, all you can hope for is to gain a better understanding of the problem.

There are many well-known examples of highly creative people who were also mad – Vincent Van Gogh, Robert Schumann, Friedrich Nietzsche, to name the first that spring to mind. But it is difficult to know precisely what form the madness took in these figures from the past. Kay Jamison, has written about important British and North American writers and artists, including Byron, Tennyson, Melville, William and Henry James, Coleridge, Hemingway and Virginia Woolf. She concludes that the madness seen in these and many other highly creative people was manic-depressive psychosis, rather than schizophrenia.

My interest in the design of healthcare facilities predates the above-mentioned diagnosis. In 1979 at the Department of Architecture and Regional Planning, Indian Institute of Technology, Kharagpur, I did a thesis on the design of a 250-Bed Hospital, taking as my brief and site the now-existing Hinduja Hospital in Mumbai, under construction at that time. I used to play chess in school, decently well, played a lot of intoxicated bridge in college, not very well, but I was soon to leave these games behind as unsatisfying compared to the game of architectural design. Among the building types I came across in architectural school, hospitals seemed to offer the most challenge, functionally and technically complex and thus aesthetically more challenging, the building form resisting the designer's efforts at massaging it into something acceptable, let alone beautiful. For a long time, both before and after the

diagnosis, I believed I lacked the creative 'spark', I needed to be passed the ball before I could score the goal, there were no brilliant, solo performances. Since that time I have devised a number of methods for kick-starting the design process, but none as satisfying as working along with a more talented designer. There is a special joy in that, reserved for those of us who have had their egos shattered. Humility enables joys that the proud have no conception of.

The distinction between these different forms of psychosis remains to some degree arbitrary since independent biological markers are yet to be found. The current consensus is that there is indeed a link between creativity and madness, but the suggestion that the madness in question is manic-depressive psychosis rather than schizophrenia must continue to be treated with caution. In some cases the argument becomes dangerously circular. I have heard it said that the suspicion of schizophrenia in the case of Virginia Woolf (one of her symptoms involved hearing voices) can be dismissed since schizophrenia is so rare in practicing authors. Furthermore, there are a few highly creative people who do seem to have suffered from schizophrenia as it is currently defined. The case of John Nash is now well known through the feature film *A Beautiful Mind.* His pioneering developments in economic game theory won him the Nobel Prize, and yet he clearly suffered from paranoid schizophrenia.

My mind is not beautiful and I doubt he would admit to his being either. My mind is deep and dark, populated by all kinds of creepy-crawlies. Once you are able to confront these nasty beasties, and make your peace with them, you can then turn your attention to the beautiful things within and without your mind. Maybe that is what he means when he agreed to that title, if he had any say at all! (Don't listen to him! He's crazy!) I think the movie glamorized what is essentially a very sordid affliction. Not all of us survive schizophrenia with that kind of grace.

There does seem to be some truth in the romantic idea that there is a relationship between madness and genius. For a very few people, psychotic ideas reflected upon in tranquility can be the basis of important creative works. But the majority of people with schizophrenia can gain little of value from their psychotic experiences; they have lasting intellectual problems and a high-level 'executive' system that places tragic limits on what they can achieve.

The majority of people I have met in my life have not suffered from any psychosis, let alone schizophrenia. For these people, normal ideas reflected upon in tranquility have not been (by and large) the basis of important creative works. In fact, similar to the majority of schizophrenics, these normal people seem to have gained little of value from their normal experiences; they have lasting intellectual problems and a high-level 'executive' system (whatever that is) that places tragic limits on what they can achieve.

So what? Like the youngsters today say: "Just like that."

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Zen and the Art of Healthcare Facility Programming:
The Qualitative v/s Quantitative Approach

Hospitals can be seen as a model of the "high tech" – "high-touch" organization that evolved during the twentieth century. A notable characteristic of any hospital is the division of information and technology into sub-units (departments), which function autonomously to a greater or lesser degree. A significant amount of decision-making authority rests with these departments, as well a great degree of control over their own operations.

In this sense, hospitals only *appear* to be organizations that are hierarchically structured; in reality they bear more resemblance to symbiotic organizations which function by maintaining a functional and political balance between its constituent parts. This presents a particular problem for the healthcare programmer, one that s/he must recognize and accommodate.

Using experience as a guide, an architectural program for a healthcare facility can be generated by a programmer with specialized knowledge in the field. S/he needs to recognize the complex power plays that exist in the organization and try to decipher (yes, almost like hieroglyphics) the "real" needs of each user group that will eventually form the hospital's organization. These needs may need to be considered within the context of the needs of the healthcare provider or "client" that is financing the project.

To a large extent, the so-called "concept" of the architect as form-giver is determined, given abstract shape, by the facility programmer. This can be a subtle influence, difficult for an outsider (or layman) to perceive. There needs to be a "meeting of minds" between the architect as form-giver and the architect/healthcare professional as programmer.

Quality architecture originates from a synthesis of quality programming and visionary design. Great buildings result from a symbiosis of form giving and user insight, a collaboration of design and programming skills. The fallacy of separating programming from architectural design is that traditional programming builds from the inside out and is *two-dimensional in nature.* It assumes that complete building requirements and operational systems can be established without testing context-sensitive site and building concepts. In this kind of programming the emotional needs of patients and their families, the need to reduce stress among the staff through appropriate design and environmental friendliness and effective strategies for conserving energy, often get short thrift.

Two-dimensional programming is ***quantitative*** in nature.

It is derived from a narrowly focused analysis of user function divorced from any special knowledge of the needs of that specific building type, functional or emotional. In many occasions, in response to this type of architectural program, the building is conceived in a formalistic sense as sculpture. Imagine a hospital conceived as a monumental building, importance being given to symmetry and a grand entrance with an atrium lobby, or worse, maybe two triangles with points touching! The needed space is then stuffed into the building form in the best way possible. Such approaches ignore the actual needs of those for whom the structure is intended.

Great architecture needs interaction between programming and design. The programmer needs special knowledge of the building type, knowledge that transcends space needs derived from activities and objects that the building is to house. The program must additionally be derived from particular problems, particular needs that necessitate an insight into the way the building functions and the particular emotional needs of its users.

That is, a *third dimension* is needed in programming. It is a dimension that contains sensitivity to the special needs of that building type, thus bringing the program out of the paper.

Three-dimensional programming is ***qualitative*** in nature.

In the teaching of Buddha, there are three things that make all the difference between your meditation being merely a way of bringing temporary relaxation, peace and bliss, or of becoming a powerful cause for your enlightenment and the enlightenment of others. They are called: "Good in the Beginning, Good in the Middle, and Good at the End."

Architectural design can be seen as a progression from a more abstract representation of a building to a less abstract form of the visualized end result, the completed building. A Buddhist might argue that even the completed hospital is nothing more than an illusion, but for the purposes of this article we will maintain that there is a "solidifying" of sorts over the duration of the project. Programming is the first step of this process. Good programming makes for a good beginning.

Good in the Beginning springs from the awareness that we and all sentient beings fundamentally have the Buddha nature as our innermost essence, and that to realize it is to be free of ignorance and to put an end, finally, to suffering. So each time we begin the practice of meditation, we are moved by this, and inspire ourselves with the motivation to dedicate our practice, and our life, and to the enlightenment of all beings.

What I am recommending, so to speak, is simultaneous programming and design. The program has to be derived from the concept, and simultaneously it has to define the concept. It must speak of the building as an architectural object, with all the associated perceptions of being perceived as a work of art, and at the same time it has to efficiently address the needs of its users. Beyond this, it must establish in the collective client's mind the potential inherent in a well-designed building. The program must be very down to earth, have both feet firmly on the ground, and simultaneously must give us a glimpse into the nirvana of the afore-mentioned Buddhist. It should contain the seed of an *insight* into the problem, put us into the frame of mind conducive to finding a good solution.

Good in the Middle is the frame of mind with which we enter into the heart of the practice, one inspired by the realization of the nature of mind, from which arises an attitude of nongrasping, free of any contextual reference whatsoever and an awareness that all things are inherently "empty", illusory, and dreamlike.

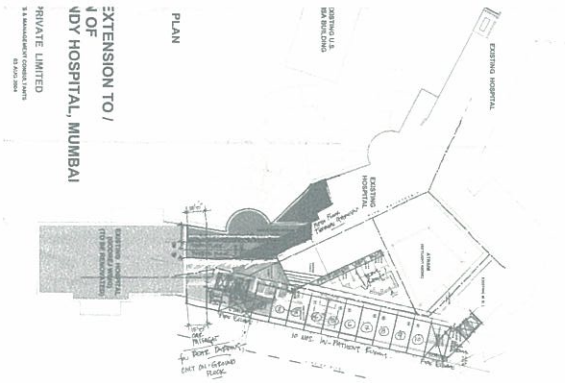
Healthcare architecture needs to mirror sub-specialization in a way that reflects the needs of the clients we serve. Healthcare providers are looking for a high degree of skill, expertise and experience while selecting architects for their hospitals. There is also an ongoing initiative to humanize the health care environment and an acknowledgement that health care buildings are major works of architecture that have impact as buildings, both on the community they serve and on those who use them. In selecting a planning team, enlightened healthcare providers increasingly are looking for a blend of specialization and design leadership. These forces reflect basic market-driven economics. Clients will select firms or combinations of firms that are perceived to have an effective blend of specialization and architectural design commitment. Such firms, or combinations of firms that routinely work together, that offer a successful blend of these skills will increase market share by providing a unique understanding of health care and architecture that can be applied interactively during the programming and design process. In the end, it's about touching excellence in what you do.

Good in the End is the way in which we bring our meditation to a close by dedicating all its merit, and praying with real fervor: "May whatever merit that comes from this practice go towards the enlightenment of all beings; may it become a drop in the ocean of the activity of all the buddhas in their tireless work for the Liberation of all beings."

Drawing: Making Love to the Paper

The act of drawings seems particularly important to many designers.

I actually find it hard to think without a pen in my hand and at least four more in my pocket. The act of making marks on paper mediates the flow of words. Donald Schon has referred to the architect as 'having a conversation with his drawing'. This seems to be what Denise Scott Brown, the wife and professional partner of the architect Robert Venturi, means by the 'eye re-interpreting what the hand has done'. The drawings designers make while thinking are frequently diagrammatic in the sense that they are not attempting to indicate three- or even two- dimensional form. Even organizing the brief is a graphically aided activity for Herman Hertzberger, architect and editor of the highly influential Dutch architectural magazine, *Forum*.



I make notes during meetings in the form of little doodles, an attempt to use even text artistically, often switching between black, red and blue felt pens. With felt pens you can stroke the paper, a feeling akin to touching your mistress when the drawing is going well. Like I said.

Frequently, drawings are overlaid and mixed together. Two-dimensional plans or sections can be seen with sketches and more diagrammatic marks all on the same piece of paper in what appears to be a confusing jumble. (Remember the 'juggling' of issues in the previous article?) Richard MacCormac talks of his "thinking pencil".

It is definitely true that designers need to draw in order to think, and perhaps we could conclude that a failure to draw might indicate a gap in thought. The drawings I make while thinking define the problems I find and thus are related to the problems I solve. These are serious drawings, lean and mean, they try to clarify and communicate. They are not drawings as in 'art'.

At least I try not to let them become that. Many times I am have been guilty of being seduced by the drawing to the point of designing the drawings itself rather than the object it represents. Just having fun. My felt pens are almost a part of me, I travel with them, the relationship is close, very natural, such a contrast to my awkwardness with people. I love my felt pens.

My drawings help me in ordering my creative chaos. The creative mind requires management; it has to discover the clue to suggest that suggests the required development, has to perceive the creative end to be reached, and assure certain and economical movement towards that end.

Richard McCormack makes explicit reference to the role of the drawing tool as a way of mediating an appropriate cognitive phase. "These different frames of mind involve different instruments for producing and representing what you are doing." What this suggests is that somehow the feel of the instrument in the hand and the way it interacts with the paper induces the right mental set. Marshall McLuhan taught us that the "medium is the message", but for designers it seems that the medium is related to the frame of mind. (I am most at peace and very tranquil when I have a yellow ochre felt pen in my hand.) There is a sense of immediacy about drawing lines on paper that I think only a designer or an artist can feel.

I like designing most of all on white A2 paper on a writing table. No backs of envelopes during plane journeys for me, I like to design in comfort and let the drawing breathe. No standing at drafting tables either, had enough of that, I've paid my dues. It's only about having fun from now on, stroking and getting stroked. Hussain Varawalla, Director-Fun-Loving, HOSMAC (India) Private Limited, Mumbai.

This is the way I like to do it: Just like that.

The Healthcare Facility Design Process: Is Interactive Design the Way Forward?

Towards the end of the 1990's, at a health facilities design jury in the USA, over 250 entries were reviewed, and only one project received a design award! We healthcare designers need to hang our heads in shame. Increasingly we find clients asking us about the role that art and nature could play in creating "healing" environments, color therapy and stress reduction now being cocktail party chatter. With this increasing sensitivity on the parts of the healthcare providers and users, why are these depressingly similar and ugly hospitals still the norm in India?

We are just beginning to learn how to execute the project design without too many flaws and thus reducing the large amount of demolition and reworking that has plagued the industry so far. There is a failing at a deeper level, in the very structure of the healthcare design process itself. In the book "Hospital Interior Architecture" Jain Malkin writes the following as related to beginning a project:

"Every project must start with intensive programming and interviewing sessions with key staff who will be using the facility. The quality of this aspect of the project, combined with a sensitive design team who can emphatically imagine in the roles of patient, family member and staff, is directly proportional to the success of the outcome…. An aesthetically beautiful project can be created without a rigorous programming effort, but can such a project be viewed as successful if it fails to meet the users immediate and long-range clinical objectives?"

In reality, simple space lists are often misunderstood as representing "programming" and seldom identify global design issues. The typical, conventional design process falls far short of creating the synergistic interplay of complex elements, both real and perceptual, for a successful health facility project. We need a design process that incorporates the diverse and essential design criteria for a health facility, a "structured" design process.

The first interactive structure in the field of healthcare design is generally attributed to the architectural firm of Caudill Rowlett and Scott, Inc. (CRS) in the mid-1960's. The process was later documented in "Problem Seeking", a book by William Pena, a principal at CRS. Pena identifies five steps in the programming process: (1) establish goals (2) collect facts (3) uncover concepts (4) determine needs (5) state the problem. It is interesting that he ends with "state the problem", as I have always maintained that the solution to any problem is to be found within the problem itself, and not outside it, hence the greater the clarity and accuracy with which a problem is defined, the easier it is to solve it. If a problem is perfectly defined, the solution becomes self-evident.

The first challenge of an interactive design process is to create a seamless integration of the less graphic, analytical programmatic criteria into the synthetic design process itself. Programming should thus be an essential part of the design process, and not separate and distinct from it.

The Interactive Design Process

Very few projects are designed with a truly interactive design structure. To qualify as an interactive design process, the following should be true (according to Mayoras and Moon):

- Establishes universally accepted and measurable goals for the project.
- Provides direct client/user authorship in the project design
- Communicates ideas in a graphic format understandable to the client/user
- Provides a single-project-focused format
- Allows the design team to experience firsthand actual existing conditions
- Provides simultaneous resolution to various (and often contradictory) points of view
- Creates a sense of project urgency and realism by establishing project momentum
- Creates real-time physical deliverable(s) for immediate client discussion/review

Other names for an interactive design session are "design workshop", and lesser used in India, the "charette". The charette, then, is an on-site interactive session in which ideas are documents and communicated visually through drawings, diagrams, models and other graphic tools. Concepts are tested and evaluated in an open team format with the client as an integral team member. It is not within the scope of this article to document all the activities that go into a successful charette. Suffice it to be said that it is an intense design experience, and is usually a very effective way of establishing a design direction for the project.

Conclusion

Conventional design processes often draw on previous firm experience and/or precedent, but the design of complex, successful health facilities project is a lot like having children – no matter how many you've had before, each one is certain to be slightly different. An interactive design process unites the wide-reaching pool of various perspectives into a single project context, and can provide each project with an inherent uniqueness of experience for each client and patient who uses the facility.

Designing Healthcare Environments for Handicapped Children

Architects in India are generally not very interested in barrier-free design and accessibility. The majority of them would not have even heard these terms used in this context. They are unaware what good can happen through appropriate design because they don't really understand the impact of bad design.

Children know immediately when they are sick. The way in which parents, doctors and healthcare workers react to a child who is fearful of being ill is of central concern. If the parents and the caregivers are not given an environment in which they can make the child feel comfortable, then the child can't get well. Children get frightened very easily when they get brought into a traditional hospital setting. They need a different arena of design.

Bruce Komiske talks about the lessons the project team learnt form the construction of the Hasbro Children's Hospital:

" ...some of the guiding principles we learnt from our project. First, if you don't set a vision for the project that is beyond where you are, all you will create is the same program in a pretty new box, and nobody can afford to do that...Second, there is the objective of creating an economic advantage in the new project. The days of just replacing facilities because they are old and antiquated are over. The third point is that you have to break paradigms in order to be truly successful."

He goes on to say:

"...thing we tried to do was to celebrate our successes at every step. Very few opportunities in healthcare allow you to have as much fun as going through a project, and you ought to take advantage of it."

I wish the people in the healthcare industry involved in healthcare projects would realize this. We may be designing a hospital to help heal handicapped children or sick people in general and one would think what a happy activity to be involved in, but the acrimonious project meetings in which everybody's sole aim seems to be to cover their behinds would belie this.

To get back to the issue at hand. Enumerated below are some design imperatives for designing healing environments for children, handicapped or not.

1. Providing a circulation system that promotes easy orientation and administrative surveillance of the building and meets accessibility standards.
2. Providing a non-institutional, non-threatening setting that simulates a home environment.
3. Creating distinct territories for different programs that may be housed in the building, each one having a distinct identity and sense of place.
4. Developing architecture in harmony with its place. (I don't think Disneyland should be the design imagery that would be appropriate.)
5. Providing an environment where color, light, acoustics, tactile surfaces and climate control have been carefully thought out, this will enhance the healing process.

I'm sure there will be other design objectives that will be equally important. Please let me know, my email address is given at the end of this article.

I am going to conclude with a wonderful quotation about what architects should be doing, from a lawyer named Roberto Unger, profiled some time back in the Harvard Graduate School of Design newsletter:

"The architect at his best must make forms enabling people as individuals and as groups to express themselves by changing their situations. In this manner he becomes like the lover for whom the fulfillment of the beloved's life plan is part of his own life project. He lives out his transformative vocation by assisting someone else's..."

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Zen on Alternative Paths: The Value of Psychotic Experience

Who am I? Where are we? What is this situation?

Humanity is on a raft; the raft is on an endless ocean. From his present dissatisfaction man reasons that there was some catastrophic wreck in the past, before which he was happy; some golden age, some Garden of Eden. He hopes and reasons that somewhere on the horizon lies a promised land, a land without conflict, doubt, anxiety or fear. Meanwhile he is miserable *en passage*; this myth lies deeper than religious faith.

But there was no wreck; there will be no promised land.

There is a lot of talk nowadays that our society is sick. What I want to do is to call into question, very fundamentally, all our basic ideas about what is sickness, what is health, what is sanity, what is insanity. I think we have to begin from this position of humility; that we really don't know. I think people that are called 'crazy' just have a different way of evaluating things. Sanity is just the way the majority of people on the other side of that thin red line gets together and says "Well, the way we see it is the way it is." And you will remember Kipling's story in the Jungle Book called 'Cause Hunting' how the monkeys, the bandicoots are laughed at because every once in a while they get together in a meeting and shout "We all say so, so it must be true!"

Zen has attracted attention over the years, since 1927, when Dr. Daisetz Suzuki first published his essays in Zen Buddhism. Because of the exotic nature of the practices described, the Western world got an extremely glamorous impression of what Oriental wisdom might be. The whole idea of a Zen 'master', and the way the whole word 'master' got attached to a teacher of Zen, carried with it the flavor of the great guru of Indian tradition, and the feeling developed that these people have tremendous powers. In actuality they have about them something that is very fundamentally lacking in seriousness.

The Tibetan holy man Milarepa withdrew to a cave to meditate. He was so indifferent to material comforts that he ate nothing but nettle soup and wore no clothes at all. His sister came to visit him and brought him clothes, but he refused to wear them. "At least for decency's sake," she protested, "take a small piece of cloth and cover your thingummy." Milarepa took the cloth, formed it into a cone and stuck it on his nose.

Don't expect a Zen master to be like the Pope. They follow a tradition that is very ancient, which is that in every society, there is an inner group that doesn't believe in the fairy stories they've been told. They see through. To whom everything becomes completely transparent, as opposed to terribly complicated. Normal people live in constant dread of sickness or death or loss of property or status. Such anxiety spells the death of spontaneity.

The value of chronic psychosis is that it teaches you what it is to be 'nobody', to have your ego shattered and then to develop an anti-ego, which is a specifically human psychic force, a function of civilization, of communication, of the uniquely human ability to compare and hypothesize. And this anti-ego gains power over our behavior to the extent that we believe that were it not for our crippled minds then we might be what we can imagine. Then you know you've hit rock bottom.

At this point, you're not really bothered about tomorrow, whether you'll even be alive, it awakes in you a kind of savagery, nothing matters but the here and now, and through the destructive approach to life that this 'nobodiness' can result in, maybe you can truly learn the value of what you don't have. Savage Garden sing about it in their album "Affirmation", '...(I believe) you can't appreciate the love till you've been burnt...(I believe) you don't know what you've got until you say goodbye...'

Psychosis is a difficult way of becoming a Zen master. Meditating for 30 years is easier. In India two in five schizophrenics fully recover over a period of time. In the West that figure is one. Quite an amazing difference, don't you think? I like to think that difference in statistics is enabled by us Easteners having an enhanced ability to appreciate love (of course, it may be due to gene number XBY-24355-3P, that one or the other lacks) but I am an incurable romantic, and don't really mind dying one tonight. I have no unfinished business; I'm going to complete this editorial before I sleep.

In the 2004 Grammy awards, George Harrison (yes, of Beatles fame) was nominated for a song that goes '...if you don't know where you're goin'...any road will take you there...' to which I say: Amen.

Technology: The Future Role of Architects in Healthcare Delivery Systems Design

Architecture, as a service to human societies, could be defined as the provision of fit environments for human activities. The word "fit" may be defined in the most generous terms imaginable, but it still does not necessarily imply the erection of buildings. Environments may be made fit for human beings by any number of means. A disease ridden swamp may be rendered fit by inoculating all those who visit in against infection, a natural amphitheater may be rendered fit for drama by installing lights and a public address system, a snowy landscape may be fit by means of a ski-suit, gloves, boots and a balaclava. Architecture, indeed, began with the first furs worn by our earliest ancestors, or with the discovery of fire – it shows a narrowly professional frame of mind to refer its beginnings solely to the cave or primitive hut.

The service that architects (healthcare designers included) propose to perform for society can often be accomplished without calling in an architect, and the increasing range of technological alternatives to bricks and mortar may as yet set a term to the custom-sanctioned monopoly of architects as environment purveyors to the human race (more so centralized healthcare delivery environments). These alternatives, whose justification is measurable performance rather than some cultural sanction, extend, however beyond the provision of technological services, and include analytical techniques as well, so that it is possible to define "hospital" without reference to a patient room or an X-ray machine, but simply as an integration of a complex of intrapersonal relationships and technical services. To do so would, in fact, be to depart so far from the operational lore of the society we inhabit as to provoke alarm and discomfort even among the engineers, scientists and doctors who, within their specialities, regularly employ these techniques. Nevertheless, a moment's reflection on such phrases as 'TV Theater', 'Radio Concert Hall' or 'Virtual University' will show how far technological advance has made nonsense of concepts that were hitherto building-bound, and yet have gained popular social and cultural acceptance.

Under the impact of these intellectual and technical upheavals the solid reliance of architects, as a profession, must eventually give way. Yet the Functionalist slogan "a house is a machine for living in' gives nothing away because it presupposes a house. Far more seditious to the established attitude of healthcare architects is the proposition that, far from ambulances being substandard hospitals, a hospital is, for many functions, a substandard ambulance. The profession tends to dismiss the potential impact of scientific and technological alternatives to the art of building. There is an ever-increasing tendency among 21st century service providers of any kind to take the service to the customer, as opposed to the customer coming to the service. Technology is enabling this paradigm shift, and healthcare facility designers could do worse than take note. Bob Dylan sang about it, nasally prophetic: "…The times they are a changin'…"

Human environments currently under consideration in urban India are constructed environments, static, more or less permanent and designed to operate without the consumption of too much mechanical energy. These last two proviso's are both rather relative since no discussion of the present state of architecture in urban India could ignore the transitory, pulsing nature of the shantytowns of the poor and at the other extreme modern healthcare facilities, embodying high-tech grandeur, which, operating as they are in extreme climates, can only be kept fit for human activities at the cost of pouring vast quantities of mechanical energy into them in the form of air-conditioning and artificial light.

If we consider automobiles as the manifestation of a complex and agitated culture-within-a-culture producing discrete objects which are themselves environments for human activities, we could obtain a standard of comparison for the activities of the architectural profession. They may ruefully compare the scale of the constructional work produced by the automobile culture with that entrusted to architects; they may enviously admire the apparently close communion that exists between users and producers, the direct way in which designers and stylists seem to be able to apprehend the needs of motorists and satisfy them, but they surely need not draw lessons from the work of stylists about the possibility of tailoring aesthetics to fit the aspirations or the social status of the clients. Urban Indian architects are only too aware of this possibility, and indeed make it a certainty at every given opportunity.

However, there is no ambition to imitate automobile form in contemporary architectural design. The operational lore of architects seems not to include the idea of expendability. On the other hand the forms of the more permanent products of technology are liable to imitation – to cite a notorious example, the development of cooling towers for power stations have been paralleled by a series of

pseudo-cooling towers, an example being Le Corbusier's Parliament House for Chandigarh, and the development of modern petro-chemical complexes vis-à-vis Richard Rogers and Renzo Piano's Pompidou Center in Paris.

This sincere flattery of technology is one facet of the almost fetishistic regard afforded to certain classes of engineers, nowadays the desire to incorporate engineering forms into architectural design is overwhelming, more recently the work done by mathematicians in the field of fractals and forms taken from the biological sciences provide rich imagery for architects. The pop culture and the visual media also serve as powerful influences on architectural form. Fragments of history juxtaposed with each other and anything else the designer might find at hand have also had their effect on the built form of our cities, especially Mumbai.

Prefabricated systems' building is accepted as "architecture", however there is a division of mind here between architects and engineers. The operational lore of the architectural profession in India has assimilated prefabrication as a technique applied to fairly small repetitive components to be assembled on site. Such an arrangement still leaves the determination of functional volumes securely in the hands of architects, and the physical creation of those volumes securely in the hands of traditional-type site labor.

But prefabrication, for most of the creative minds in the plastics industry, means something quite different. It means the fabrication of components large enough to be effective determinants of functional volumes. These designs call for the off-site fabrication of complete functional volumes such as bathrooms and kitchens, a procedure that both has structural advantages and makes it possible to complete most of the fabricating work under controlled conditions. The result is a structure put together from large, modular units with universal joints. Such structures are widely used today to provide critical healthcare in disaster management programs. The medical profession in India is also familiar with vaccination and ophthalmic surgery camps, but no effort has been made to provide for these camps "temporary hospitals", the surgery is often done under substandard conditions and the cases of blindness that result make headlines in the tabloids, to be read and immediately forgotten on the way home from work.

However, such ideas have hardly touched the general body of architecture at all as yet. Much of the painstaking and valuable research that can be shown has been undertaken in conditions that presuppose the existence of rectangular, permanent and static buildings. The fruits of such work often wear a characteristic air of grid-like simplicity, which, it should be noted, derives more from the mental disposition of the men involved than from the findings of the research programs. Architects, including healthcare architects, don't spend much of their time reading research data; in fact they don't spend much of their time reading anything at all (tabloids en route homewards?). Via market and motivation research, and the long accumulation of sociological data, considerable scientific data on the behavior of people in various environments already exists, and when designers can overcome their long-standing distrust of sociologists they may well find that a great deal of very suggestive research is already at their disposal.

The youngsters today might have some good words of advice for the architectural profession in India today, especially those designing healthcare facilities. They might say: "Get with the scene, dudes..." There are a whole lot of exciting things happening in the world outside, technical and scientific developments, information on which is easily available in todays connected, wired world. We healthcare architects need to open our minds to this plethora of information to improve the way we approach the design of our projects. A lot of it is couched in very technical language, anathema to us 'creative' thinkers. As was hinted at in the beginning paragraphs of this article, we need to transcend the traditional limitations of our professional training to embrace a more holistic view of what we are trying to do and be more creative in finding solutions by going to the roots of the problems we are dealing with.

Easier said than done, no doubt. However, in our firm of hospital planners and management consultants, we have evolved a specialized and multi-disciplinary approach to the broad spectrum of issues that confront healthcare facility designers today, right to the extent of letting our staff develop their fields of interest in keeping with their temperament, transcending education and initial job descriptions. Science, engineering and aesthetic sensibilities co-exist with a social conscience and business management skills in an environment that brings forth the best in all of us.

Healthcare architectural firms have to undergo a metamorphosis into holistic healthcare consultancy firms, they have to realize that there is more to healthcare facility design than the skills and knowledge of healthcare architects can competently deal with. We need the help of a variety of professionals as equally respected members of the design team; the architect has to surrender his/her demigod status in the design team and has to accept that there are people out there who can and must shoulder an equal part of the burden.

Let me leave you with this quotation from Chuang-Tzu, a Chinese philosopher:

"A man who knows he is a tool is not a great tool."

Florence Nightingale: What Lessons Would She Teach us Today?

Florence Nightingale was born into a two-class society characterized by the pauper and the aristocrat. The latter believed it was his God-given right to rule and be served by all the others. The Nightingale family, however, was different. It saw itself as having a philanthropic duty and assumed some responsibility and provided relief for the serfs on their property or in their villages. Florence's father, in a day when genteel women were held to be too fragile for any exertion except presiding at a tea or dinner table, believed the female mind should be cultivated beyond this role. So he provided his daughters with a broad, liberal education. (Present day Male Indian Chauvinist's please note. How many Florrie Nairs have you deprived us of till date?)

As a consequence, Ms. Nightingale was a scholar, fluent in at least four languages, knowledgeable in history, philosophy, art, music, literature, religions, political science and statistics. She was well traveled and had an enquiring mind, great powers of observation, and a keen, analytical intellect. She was about 25 years old when she realized that her long-held attraction to social service called her to the field of nursing and the care of the sick.

Ms. Nightingale also developed her own philosophy of life and came to grips with humankind's unique purpose in the world. She came to believe humankind's purpose on earth was to create a better world and to do so without delay. She felt that man should do what had to be done and do it well, and that it was man's duty to alter, not conform to, the circumstances of life to bring about the kingdom of heaven on earth.

Because of her comprehensive knowledge and social position, she was in a key place when the British people clamored for the government to remedy the deplorable neglect of the British soldiers in the Crimean War. As an experiment, Sidney Herbert, Secretary of War (and personal friend), appointed her as Superintendent of Nurses.

With an almost complete breakdown of medical management and military support systems, Ms. Nightingale provisioned the sick and wounded and instituted extensive military and medical reforms, which included hospital dietary, sanitary, laundry, social, recreational, and educational aspects, as well as record keeping and morbidity and mortality statistics. In addition, she organized a system of providing nursing and dietary services and care to the sick and wounded.

Undoubtedly, an exemplary woman. If she were alive today, what lessons would she teach us? They would be legion, her inquiring mind would surely find much in our contemporary world to dissect and comment on. Maybe a few of these would be as follow:

1. Ms. Nightingale would have gloried in the opportunities to develop and program home educational material into every home; develop dial-a-disease video; input symptomatology to obtain current information; view an interactive television for an update on communicable or other diseases, their symptomatology, causes, immunizations, preventive measures; or see programs on mother and well-baby problems where mothers could get audio-visual advice on colic, croup, breast-feeding, diaper-rash, etc., as well as how to perform simple nursing duties.

2. For today's healthcare environments, she would insist on individually controlled environments with maximum and minimum temperature regulation, as well as humidity. While she would use artificial light with the availability of both diffused and bright direct illumination, she would still insist on building facilities that were oriented for the creation of appropriate natural daylight entry, and that windows must not be hermetically sealed.

3. Ms. Nightingale would require that furniture be comfortable, easy to maintain and keep clean, light in weight and color with non-porous exteriors, and movable. She would deplore the use of mustard yellow and hospital grays and greens. She would appreciate the selective use of pastels and distinctive coordination in each patients room rather than the monotonous repetition of the same color throughout a unit or floor.

4. Inasmuch as she recommended a century ago, that everything needed should be brought to the patient's unit, she would expect maximum automation of as much as possible:

communications, records, reports, supplies, equipment, etc. Privacy on demand would be all-important. She would want a cubicle curtain that functions, stays in place, is attractive as well as useful. Maximum decentralization consistent with individualized, personalized care would be advocated.

5. Maybe she would challenge us design professionals to create patient rooms of a sufficient size to accommodate two caregivers simultaneously, as well as the visitor/patient chair, dresser, bedside cabinet, over-bed tray, straight-backed chair and washing facilities and allow a gurney, bed or wheelchair to be moved in and out of the room.

6. The use of living greenery would be greatly admired by Nightingale, and while it may not be economically possible to provide plants in individual rooms, she would want them to be used in public spaces, waiting rooms, lounges etc. she would believe that an attractive and welcoming external environment would inspire confidence in today's healthcare consumer.

7. Providing a quiet environment is a challenge in the modern hospital. Ms. Nightingale would be concerned about controlling the idle chitchat of workers. Patients' use of earphones would be of value in controlling noise from televisions and radios. What about the racket of supply carts and dietary trays? What can be done about the telephones: blinking lights, chimes, pagers, other noises?

8. Visitors are an important part of a patient's recovery today. She would surely be concerned about how these important and often anxious people could be conveniently and comfortably accommodated while loved ones are hospitalized. Shouldn't visitors be able to get a hot cup of soup, an edible sandwich, or a cup of tea in the middle of the night after being at work all day and in the emergency room since 6.00 PM?

A century ago, Florence Nightingale stated that hospitals were evidence of an imperfect civilization. We have moved from the dark ages of the 1850's into a much more individualized approach to hospital design. She said we would wish that we had worked out what family, political and social life should be and not to take it for granted that the world would continue as it was. Surely, it requires no clairvoyance to realign the wisdom of her words with the dilemmas confronting today's world. A better world will not be given to us. Let us begin today to create it.

Healthcare Services Design: Through the Patient's Eyes

To learn lessons from existing hospitals that will help us better design and manage new healthcare facilities we need to conduct quality assessment studies and generate improvement strategies that address the needs and concerns of patients and their family members – as *they* define them, rather than how the doctors or administrators in the healthcare system define them.

It is the mission of the Picker Institute in Boston to carry out research projects in this field. The impetus for their mission came from the concern that although they found the technical quality of care very good, people who had experiences with doctors or the healthcare system often had horror stories to tell.

They decided to go directly to patients and ask them how they perceived healthcare quality. They also talked to family members of patients, as they felt that the family members witness a lot of what is going on. They also conducted focus group interviews with physicians, nurses and administrators, with the intention of finding out what might stand in the way of healthcare providers' responding to patients concerns.

On the inpatient side, they found that that the patients were very concerned about how decisions about their care will affect them. They wanted to be involved in the decision-making process, and they wanted their cultural values and religious preferences respected. They also said they noticed – and cared about – how well the many different professionals caring for them coordinated their efforts. They worried about not getting enough information and often didn't understand the information they got. They worried a lot about how their physical needs were met and how well their pain was managed. They were often fearful and anxious, and needed a great deal of family support. Finally concern was expressed about what professionals call "discharge planning", or preparing to go home from the hospital.

On the ambulatory (or outpatient) care side, some aspects such as physical comfort and pain management were found to be less important, and other issues – such as access to care – became much more important. These access to care issues were whether they got the coverage they thought they were entitled to, did somebody answer the phone when they called the doctor and could they get past the "gatekeepers" to get an appointment when they needed one.

In India, more often than not, the patients are treated like sheep, to be herded through the obstacle course of the hospital procedures necessary, given the minimum amount of information possible regarding their treatment, and encouraged to look upon doctors and nurses as superhuman beings from an alien planet with incomprehensible language and rituals (not to mention handwriting!). Healthcare institutions running in this mode will soon be in for a rude awakening. The times are changing.

I am reminded of a joke, which goes like this:

A man who had died suddenly in his sleep awakened to find himself in heaven. Being disoriented, he began to walk around taking in the wondrous sights. He marveled at the pearly gates and the streets paved with gold. After a while he felt hungry and asked one of the other occupants where he might find something to eat, and was directed to the cafeteria. When he arrived he found a line a mile long and took his place at the end. The line was progressing very slowly when a limo pulled in front and discharged a man with a great beard and carrying two stone tablets who went in ahead of everybody else. The fellow became angry and tapped the person in front of him on the shoulder and asked who is that? The person in front of him replied that it was Moses the bringer of law. This satisfied the fellow. A short while later another limo pulled up and discharged a fellow wearing robes and carrying a staff that also went in ahead of the rest. The fellow again was irritated and asked the person in front of him who that arrival was, and was told that it was St. Jerome, a patriarch and very important! This also satisfied the fellow. After a while a sports car pulled up in front and a man carrying a black bag went in ahead of the rest, which infuriated the poor fellow who asked in exasperation, just who the hell is that? This time the line answered in unison "Oh, that's God, but he thinks he's a doctor!"

The 'Central Idea': Hang On To It Like Grim Death!

Good designs often seem to have only a few major dominating ideas which structure the scheme and around which other relatively minor considerations are organized. Sometimes they can even be reduced to one idea known to designers by many names but most often called the 'concept' or the 'parti'. Such 'central ideas' inevitably emerge from early design explorations into the project.

In architectural design in general, these dominating 'central ideas' usually can be visualized almost immediately in terms of one or more kinds of architectural form(s) or architectural space(s). The 'central idea' for a healthcare (especially hospital) project may, however, be of a more complex nature, not so easy to grasp and not so easily visualized in architectural form or space. The 'concept', for a hospital building may involve elements of its proposed manner of financing, it may involve a separate 'central idea' about a building services framework which the designer, so to speak, can hang his hat on, and, in addition to the usual social and formal concerns will definitely involve an idea of the evolution and change of the building through a long time span.

In HOSMAC, we approach our projects 'holistically'. We insist on our clients formulating a 'statement of intent' for the project. This forms a reference point for professionals of various disciplines working on the project to make decisions consistent with the project goal. Thus we see that this 'central idea' need not restrict itself to the process of architectural design. A.N. Whitehead in his presidential address to the Mathematical Association puts it rather succinctly:

"The art of reasoning consists in getting hold of the subject at the right end, of seizing the few general ideas that illuminate the whole, and of persistently organizing all subsidiary facts around them. Nobody can be a good reasoner unless by constant practice he has realized the importance of getting hold of the big ideas and hanging on to them like grim death."

Time and again, however, I have been involved in projects where the client has a clouded vision of what it is he or she wishes to achieve, and this fogginess communicates itself to all those who are involved in the project, there is no 'central idea', there is no clarity of vision. And of all the various professionals involved I think it is the designers who feel the most frustrated by the aimlessness of the exercise.

Designers need to feel purpose.

The architect Richard MacCormac of the firm MacCormac, Jamieson & Prichard, referring to the 'big idea' keeping designers going through what he recognizes as a very fraught process, says:

"This is not a sensible way of earning a living, it's completely insane, there has to be this big thing that you're confident you're going to find, you don't know what it is you're looking for and you hang on."

Somebody at the top has to communicate to the whole team that yes, there is a pot of gold at the end of this rainbow. This sense of purpose is what sustains the team, the quality of the idea is the sustenance that nourishes and keeps the team going towards this distant light, sometimes maybe hazy but definitely beautiful.

Reflections on Architectural Design: (and the Design of Healthcare Facilities)

In the organization HOSMAC (India) Private Limited I head the architectural design section and what follows are some of my reflections on design in general and the architectural design of healthcare facilities in particular.

Design as a professional activity separated from the making of things is a relatively recent phenomenon, and the trying to understand how designers' design is a field still in its infancy. In the early years of serious design research it was fashionable to see design as an entirely generic and field-independent activity. Thus a respected worker in the field, Sydney Gregory, could confidently assert that 'the process of design is the same whether it deals with the design of a new oil refinery, the construction of a cathedral or the writing of Dante's *Divine Comedy'.* I am not convinced of this view and rather doubt that Dante would be either! It would be farfetched to compare the mindset and skills required for the design of a healthcare facility in 2002 to those required for the penning of poetry.

Architectural design is generally recognized as presenting a 'wicked' problem. By this is meant that such problems defy complete description and lack the clarity of formulation found in scientific problems. They are the sort of problems where the information you need to understand them rather depends on your ideas for solving them. This sort of design is a 'knowledge-rich' as opposed to 'knowledge-lean' activity. In other words, architectural design requires us to have considerable amounts of knowledge beyond that stated in the problem description. Healthcare design demands sensitivity to as diverse concerns as addressing the anxiety of a cancer patient undergoing treatment to the engineering requirements of the radiation therapy unit in which he or she is being treated. Above all one has to realize that this sort of design involving addressing such varied fields of knowledge and empathy is a process in which there will be no one recognizably correct or even optimal answer.

Early writers on the design process tended to see it as a sequence of cognitive operations conducted entirely within one brain. Such models have an almost unassailable logic and appear quite convincing to those not personally involved in the act of designing. However, while the 'methodologists' gathered at conferences to discuss the finer detail of such ideas, designers were quietly ignoring them and getting on with the business of design.

Today it is easy to see why these sequential models of design were doomed to failure. They began from several false premises two of which we need concern ourselves with here. These concern fallacies about the beginning and end of design: first, that design problems are, or indeed, can be stated clearly, and secondly that there are solutions, which can be considered in some way optimal. As mentioned before, today we recognize architectural design problems belonging to a type known as 'wicked'. They are often vague expressions about a change of some kind, which is needed or desired rather than a clear statement about a totally defined goal. They should therefore most definitely not be considered to be like crosswords or other popular types of puzzle. These are characterized by a totally defined objective and usually have a single correct solution, which can often be recognized as such when it is found. Those who consider design to be merely problem solving do the field a disservice. A large part of the business of designing involves finding problems, understanding and clarifying objectives and attempting to balance criteria for success.

We have now recognized that designers often come to better understand their problems through their attempts to solve them.

Most designers are at their best when designing, rather than writing about the process they follow. Of course, we must sell our services in the marketplace and so we may not always describe our processes honestly! My many years of design experience also suggest that when I like a solution, I can be amazingly creative in imagining the 'logical' processes that led to that solution. Other designers too can be quite capable of denying to both themselves and others the obvious importance of issues that they have chosen either to ignore completely or to relegate to minor consideration. Depending on who is 'driving' the project, a doctor, an investor, a Vice-President (Projects) or a philanthropist, the frame of reference through which the decision-making process is viewed can vary greatly. The designer then has to 'wear the hats' of those users of the facility who are getting neglected as to their needs as well as he can, champion their interest through the design process. Further to this, architects are expected to have a social conscience, to ensure that the buildings they design are good neighbors and eco-friendly. Design has to address a multitude of issues; the designer has to put his values on the line.

It is a reasonable assumption that clients choose architects to some extent because they like earlier designs they have seen, or, as in the field of healthcare design, because of special knowledge of the particular features of the building type. Some clients have a very clear vision of how they want the final design to be, while others may have almost no idea. Some clients are particularly concerned about some feature and care little about others. The relationship between client and designer therefore is not like an examiner setting students a question but rather more like someone needing help in a situation where many courses of action are possible.

At its best. the interaction between client and designer can be a highly interactive and creative one.

My recent experience of the design of the Asian Heart Institute & Research Center at Bandra – Kurla Complex, Mumbai that was done working in close collaboration with Dr. Ramakanta Panda, the visionary cardiac surgeon behind the project, was one such enriching experience. The electricity that Dr. Panda generates inspired and stretched me to new limits of focused creativity and the very frequent interaction with him (every third day, between surgeries, at night, on weekends) maintained a momentum in which new approaches were generated in a creative rush, meetings which left me with a 'design high'. The fact that the site changed midway through the proceedings did not cause as much as a hiccup in the process. It was seen as one more opportunity to improve the design! A client and an architect both willing and eager to extract the best of each other's long years of experience, working together with mutual respect, an effort that ended with a hospital that has married the science and the art of cardiac-care facility design like no other in the country.

Design is undoubtedly an artistic business, but it is dangerous to confuse it with art. Most designers see themselves as artistic but not necessarily as artists. Design usually involves making something that must work in some way as well as expressing some values or ideas. Inevitably, the end product of contemporary architectural design often demands that a great deal of technology be employed. This is especially the case in the design of today's healthcare facilities. The extent to which the problems posed by technology influence the designer's thoughts is a central issue in understanding the design process. Within the same healthcare facility, the architect may switch mental gears (tracks?) while designing the inpatient areas as contrasted with an Operation Theater Suite. Nowadays there is a proliferation in architectural theory and also a considerable variation in the way architects regard the role of technology in design. In healthcare facility design in the new millennium, though, architects necessarily need to understand the technological requirements of the building. The new frontiers in the delivery of healthcare through hospitals are divergent, one concerned with alleviating mental distress in the form of addressing the anxiety felt by patients and their family in highly stressful situations, and the other concerned with the frontier of designing for the engineering needs of contemporary medical technology.

There are of course many other questions about the nature of the design process that could be posed, and the reader will no doubt have his own. The few central issues I have raised are an attempt to stimulate the mind before reading the following parts to this article.

In those parts I will try to bring some of the issues about design raised here into sharper focus by dealing with them directly and comparing and contrasting various approaches to them. While there may be as many approaches to architectural design as there are architects, I suspect that in the healthcare design fraternity there may be more consensus on the general way forward. Being a fragment of the whole, there is likely to be more uniformity within.

For now I leave you with this thought: The great philosopher Ludwig Wittgenstein is reported to have said **'you think philosophy is difficult enough, but I tell you it is nothing to the difficulty of being a good architect'.**

Reflections on Architectural Design: (and The Dynamics of Design Teams)

In the organization HOSMAC (India) Private Limited I head the architectural design section and what follows are some of my reflections on design in general and the dynamics of design teams in particular.

I feel that the interaction between members of a design team can be a very important influence on the design process.

To quote Richard Burton, of the architectural firm of Ahrends, Burton and Koralek:

"The group has a distinct advantage over the individual because ideas can become personal property or one's own intellectual territory. The strength of that territory is considerable, and the difficulty of working alone is often in the breaking of the bonds caused by it. With a group the bonds are broken more easily, because the critical faculty is depersonalized."

Burton is talking about working with his two partners, but in the process of designing a healthcare facility in our firm, HOSMAC (India), I often get insights into what I am trying to do from design team members of varying backgrounds, especially doctors and hospital management professionals. The insights they have into the operational aspects of the health care facility under design often enable me to view the issue from a completely new perspective.

In their early years of working, Ahrends, Burton and Koralek elaborated on the idea of depersonalizing the critical faculty into a strategy to maintain a freshness of view on each project. They would only allow one to make close contact with the client and one of them would remain substantially 'detached enough to see some twist in the changes of the direction of the inquiry'.

An interesting concept, certainly, and one I would love to put into practice if I could work closely with two other designers of comparable design maturity as myself! What is happening now with us is that we turn everyone loose on the client independently, and from the resulting 'wealth?' of points of view and comments generated, I dredge for useful 'intervention' in my thought process. At any cost, stagnation in the process is to be avoided.

To quote Burton again:

"To rely continually on common assumptions can be dangerous, not least because it can lead to stagnation, so we welcome intervention, which can be either external or from within the group...it's essential that the group should not become a small closed community. Indeed we see closed communities as seed-beds of fantasy."

Different clients with vastly varying viewpoints, different engineering consultants and the different experiences of design team members on different sites ensure that we never get into a 'design rut' or, as Burton so aptly puts it, grow 'fantasies'. This comment, of course, holds good for our firm beyond the sphere of an individual project, specialized as we are in the design of healthcare facilities. In fact, our relationship with each individual client is a critical factor in determining the final outcome.

As an architect, clients notwithstanding, there are elements of art in every design, which is a highly personal thing, and it may be thought the designer would feel some amount of frustration to be involved in a process involving so many other people. But is in fact precisely because the design process involves so much cooperation and communication that can make it so rewarding. There is a thrill one gets from group activity that cannot be replicated through individual effort. This particular frisson is known, for example, to those who play music in groups or are part of a sports team, and seems to come from the very fact that the group is able to perform together as a result of some understanding which they share but which may not necessarily be made explicit to others outside the group. I find this especially evident in the inner core, the key decision-makers in any project, who subscribe to a shared vision that drives them. The feeling of accomplishment at completion is all-satisfying.

At times we find the client trying to impose theoretical ideas or conclusions drawn from user research that has been conducted away from design to propose prescriptive formulae for designers to follow. To quote Burton on this:

"life is a bit more complicated than that...and working together with people can achieve an enormous amount within this jungle of difficulty'.

I too am of the opinion that user research should be conducted with the active participation of designers, preferably in the form of feedback studies on buildings designed by those same designers, to accurately measure the fit between design assumptions and the reality of an operating facility.

If the organizational structure of the design team is not very clearly defined, it can be an advantage. The architect Richard MacCormac of MacCormac, Jamieson, Prichard speaks about his role as 'making a series of interventions at different stages of the design process'. He likes to have a degree of detachment from the everyday running of the project that allow him to intervene at what he considers to be the critical moments. (How I wish I could afford that luxury! Our design process needs my constant steering.) MacCormac says 'Part of the game is to create a crisis by recognizing that something is not right.' (This role we reserve for our HOSMAC (India) Director, Dr. Vivek Desai!) The design concept that emerges from one of MacCormac's self-induced crises can revolutionize and reorganize the whole design. However, in his view, this can only be a team activity. He says:

"I or somebody else comes up with an originating idea, some idea that seems powerful enough to generate a scheme and to subsume a lot of decisions within it...it needs someone in the team to pick up the ball and run with it. I find that I seize on somebody in the team who understands what the crisis is...you have to find this person who sees what it is about otherwise it's hopeless."

Unfortunately, in the HOSMAC (India) team at the present moment I am the only one in a position to see what it's about (so it's not hopeless, at least!). We need design team members who are in this position to see. If you have survived this article till this point, maybe it's you! Email me at hussain.varawalla@hosmac.com, talk to me in a way that demonstrates you could maybe see. Mail me a picture of yourself in your favorite T-shirt in the position you find yourself most comfortable, so that I can see if you can.

So far in my career I have never worked behind a closed door, maybe because I never merited one! But given the choice, I would prefer to work in the midst of my design team members, keep a finger on the pulse, I want to know who's happy, who's sad and why. I prefer to work with architects who are young enough to be the children I never had. Usually they have no idea of what's possible and therefore no idea of what's impossible. The intention then being to do one 'impossible' thing before the first round of tea every morning.

It kick-starts the day with a satisfying roar. Go, team, go!

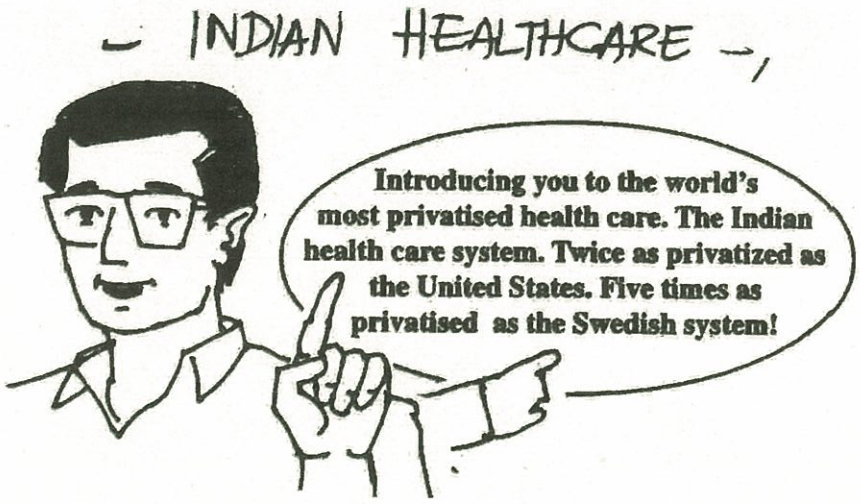
Confronting Commercialization of Healthcare

Recently I came across an interesting book, "The People's Health Sourcebook". Section 5 of this book was of particular interest to me, I have used its title as the title of this article, I am a healthcare architect with by and large corporate clients.

I am encouraged to quote extensively from the book by the authors themselves, they say:

"Any part of this book or the entire book may be copied or translated or used in any way provided it is not used for profit or commercial purposes."

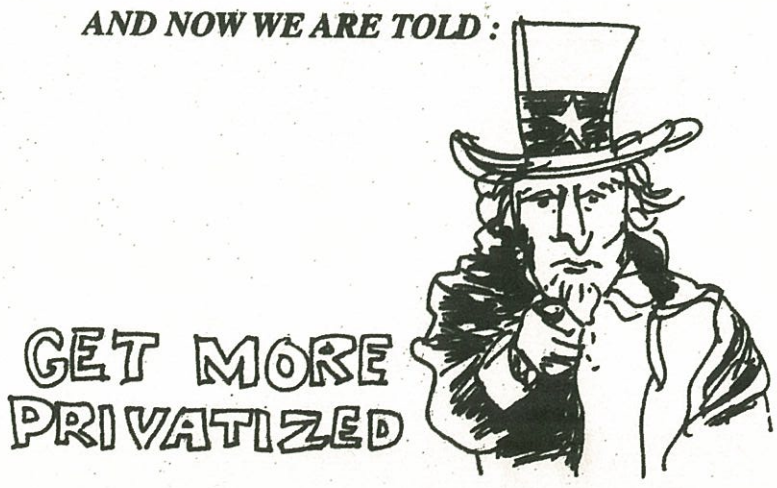
Well I will get paid a few hundred rupees for this article; I hope the authors will not grudge me that. I would just like to examine their thesis in the light of my experience of working closely with corporate healthcare providers in designing their hospitals. Being an architect and a very visual person myself I am delighted to re-present the very good visuals they use to make their point, the first one of which immediately follows:



The text following this is:

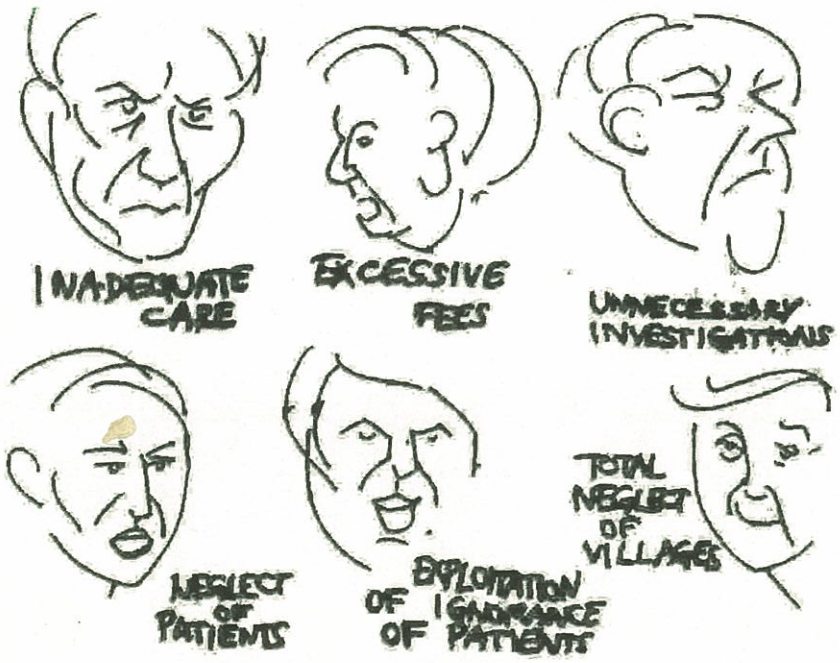
"Only 22% of the health expenditure is public funded in India as compared to 44% in the US, or 95% in countries like Sweden or 75% in all the market economies of the world taken together."

And then Uncle Sam tells us:



"But there are lots and lots of problems with this simple solution: What are the popular causes for dissatisfaction against doctors and the delivery of health care in India today?

We have now half a dozen very cynical doctors, grimacing…



"These causes are leading to an increasing alienation of the community from the Medical profession, which is a very unhealthy trend."

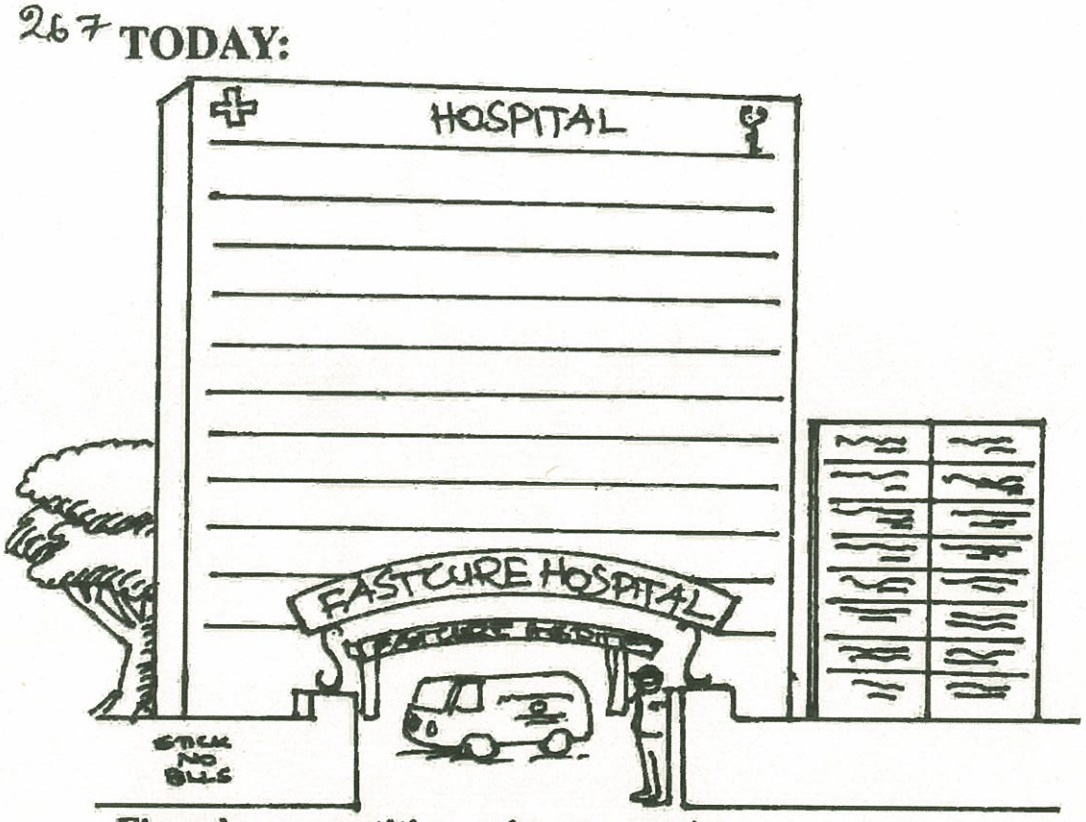
"Yesterday, all my troubles seemed so far away…" warbled the Beatles. Little did they know they were singing about Indian healthcare delivery systems.

My family doctor as a child was very much a friend of the family. Much more than a friend really, he was treated as a demi-god…The medicine was dispensed in little paper twists, and seemed to be a mixture of some or all of half a dozen powders for any illness…

The image of the general practitioner was :

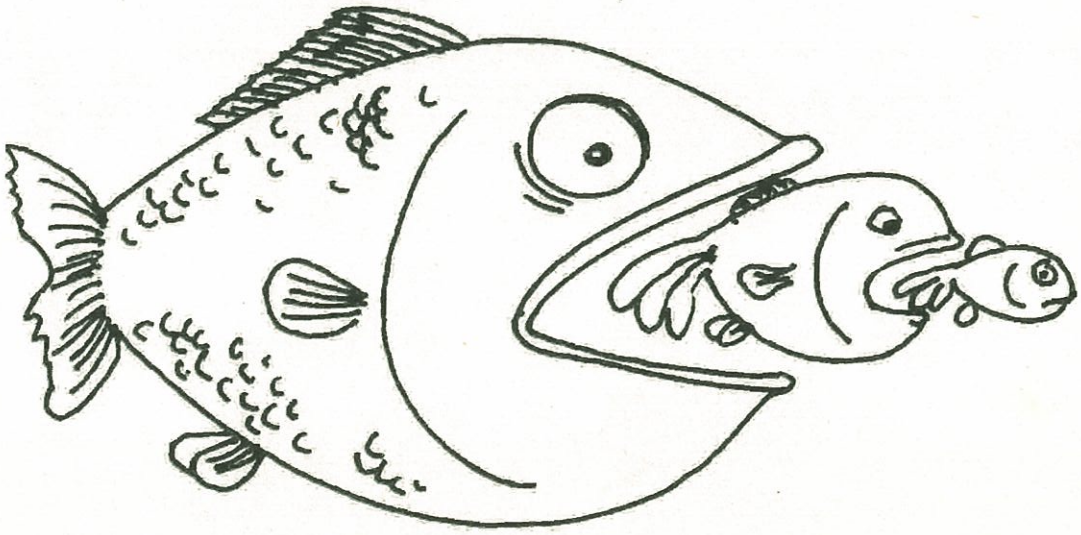
Family doctor and family friend; would come to our homes; flexible payment often deferred; few prescriptions - the compounder made up much of these.

The corporate hospital below is architecturally unappealing, but the point gets made: a drain for money…(don't miss the security guard). Quickfix hospital indeed.



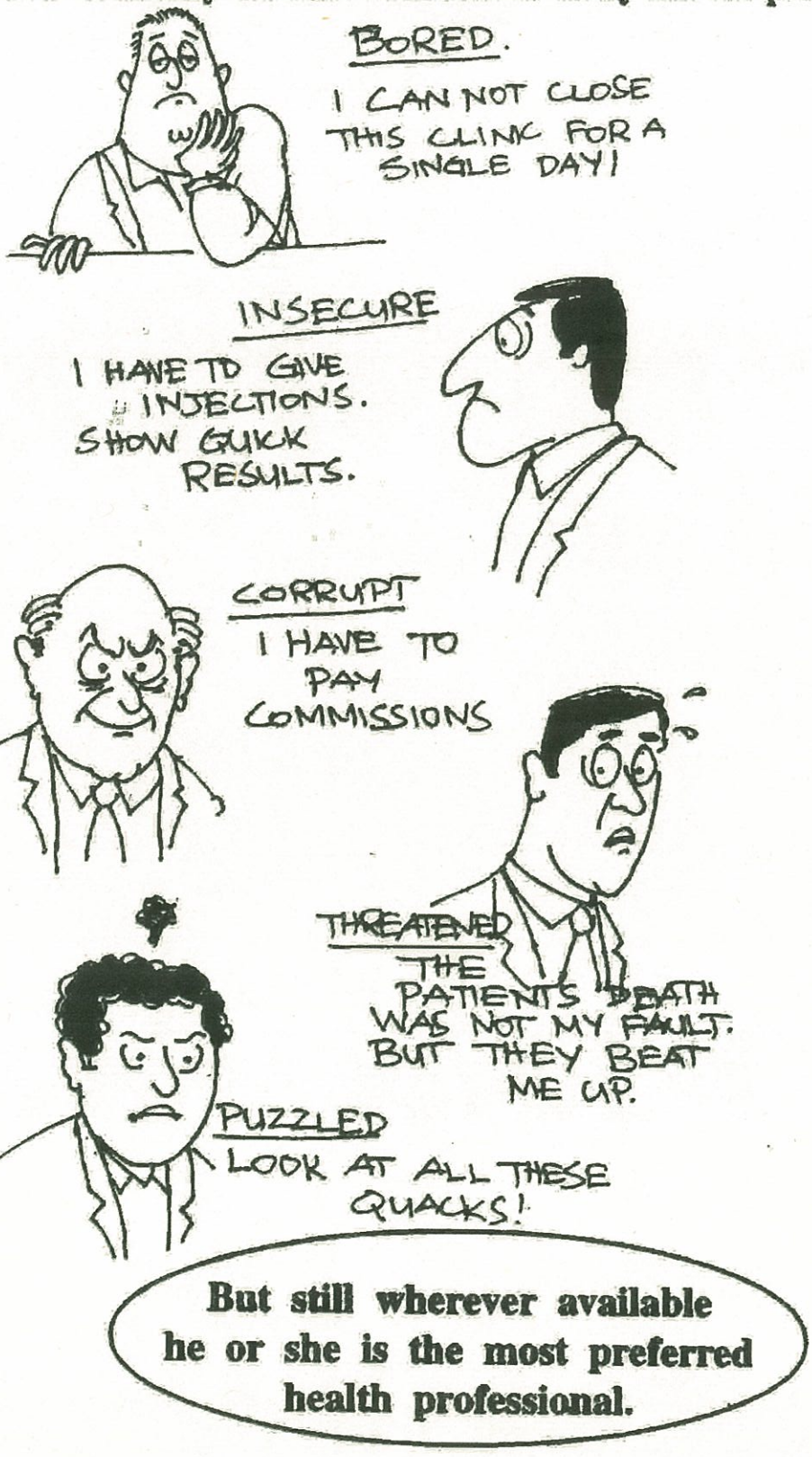
Fiercely competitive private practice

- **threatened by numerous nursing homes and polyclinics**
- **swallowed up by corporate hospitals and insurance companies - and for those who can not pay or are drained of their money a very weak public sector**



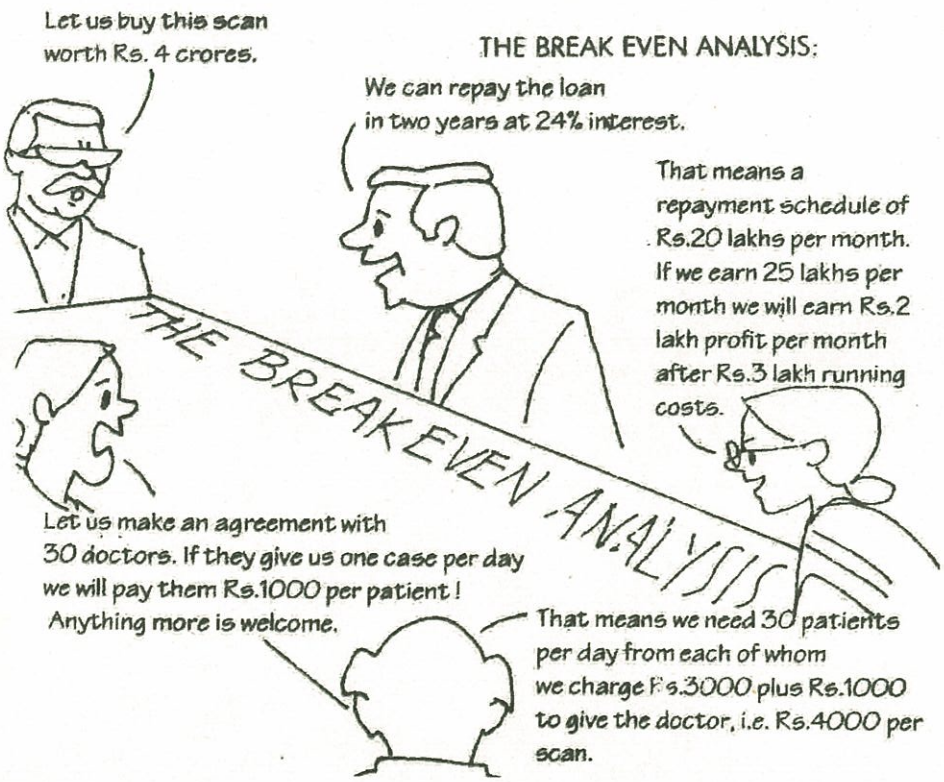
Ah, the problems of the GP…but he bears them manfully, he is most preferred after all.

The Oridinary General Practitioner today has his problems:



The breakeven analysis, a French phrase for something unmentionable...guess I'm incurably foulmouthed. Let us pray to the gods that be that nothing ever breaks even, perish the thought!

269 **At the corporate hospital it is another story.**



The book goes on to say:

"A corporate hospital is run like an industry! It is run to maximize returns on investment. The number of people who need investigation will invariably be less than that needed to break even – especially as more and more hospitals will open. Where there is a high return of investment in any sector in a market economy, more units of that type develop. However this will not push down costs or promote efficiency. It will rather promote more unnecessary investigations, unnecessary hospitalization, unnecessary surgeries and unnecessary referrals. Some of these are done as malpractice. But a greater trend is to shape modern medical science so that there is more and more "need" for investigations, hospitalization and surgery. For any other commodity if there is competition the price will stabilize around its value. But since no value is too high for human life, the ability to price is limitless. It is limited only by the ability of the consumer to pay."

Strong words. I would, by and large, disagree. Let me tackle it point by point, and present my viewpoint on the rhetoric above.

An exclamation mark after *industry* indeed! "*Maximize returns on investment*", do I need to wash my mouth out with soap again? What was wrong with the Indian mantra after Independence? Among other things, it set up a huge, inefficient public sector (including public healthcare) to which it denied autonomy of working; there were low to no "*returns on investment*" (excuse all this obscenity) and we had a poor capital-output ratio. It also pampered organized labor to the point where productivity became extremely low. All the rulers of our country did was institutionalize democracy, in the name of the poor. Indian socialism ended up doing very little for the poor. Ideology is not the solution, better management and more especially incentives to manage better, are.

A high return on investment in healthcare? To succeed in the 21st century, healthcare providers need to respond to the looming threat of competition and capitation. "…*will not push down costs*?" The impending advent of insurance and health maintenance organizations will usher in managed care. Where policy-led reform failed, market-led reform may succeed. The driving force in healthcare is going to be an economic message of managing care, managing cost, and managing clinical efficiency to create a sustainable healthcare delivery system for India. For us who are marketing design services, we can already see a shift in the customer. The customer in the past has been the hospital. More recently it is becoming the medical group and tomorrow's customer will be the health network or even a HMO.

"Some of these are done as malpractice. But a greater trend is to shape modern medical science so that there is more and more "need" for investigations, hospitalization and surgery." Sir, madam, the second is more than mere "malpractice", it is paranoia on your part and megalomania on the part of the modern medical scientists engaged in this endeavor, if any are so involved. Both are pathological conditions and call for therapy.

"But since no value is too high for human life, the ability to price is limitless. It is limited only by the ability of the consumer to pay." "Rhetoric" is defined by my Webster's College Dictionary as 'language skillfully used'. It goes on to also define it as the 'undue use of exaggerated language; bombast.' I submit that along with the evils of globalization we have also been given to learn the skills of shopping. A fool and his/her money will always part ways soon. We do not debate the actions of fools. Corporate hospitals target the well-to-do as customers; they got that way by being savvy about money matters. They pay for quality.

The economic risk of providing comprehensive services to a potentially large and eventually enrolled population will have to be managed by clinical integration and disease management. This is the reengineering of patient care. The design opportunity in this is not simply to make reengineered care clinically efficient, but to focus on the patient care experience and on the processes of achieving greater efficiency through improved engineering and facility design. The mantra is patient-focused care, not about providing spectacles by charging separately for the frame and each of the lenses.

As the kids nowadays say, "get real…"

A blasted healthcare industry and blasted healthcare facility planners both being things of the past...

THE NEW PARADIGM:

"...I lean, mean, healthcare (delivery) machine (facility planning)..."

Hemain

29/10/04.

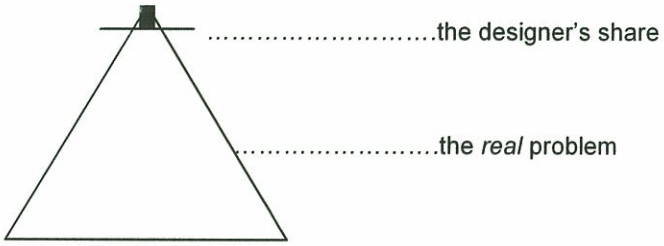
Hormaz Mehta Pvt Ltd.

The Social and Moral Imperatives in Healthcare Facility Design

A few hours back I started work on a Primary Health Center – Level 2 in a village called Attawa in Sudan, Africa. Level – 2 refers to a 50-bed facility. The first step, as usual, being to glance through the area program, I'm going through the list of departments with their attendant areas, outpatient department being 705 square meters, diagnostics, 450 square meters, mortuary, 135 square meters, laundry...Hey, hang on there. *Mortuary, 135 square meters, that is, one thousand five hundred square feet!* A comparable figure for one of our 50-bed corporate hospitals in India would be eighty to a hundred square feet max.

There is a tragedy to be read between the lines of that area statement. I look at my conceptual design sketch for the facility a couple of hours down the line and I feel that I am helpless when confronted with the enormity of the problem, not just in Africa, but closer to home too. Sitting in my air-conditioned design office listening to Ronan Keating singing "Baby Can I Hold You" on my computer speakers, I feel a hollowness in my stomach, but I know an invitation to party this evening will make that feeling go away real fast.

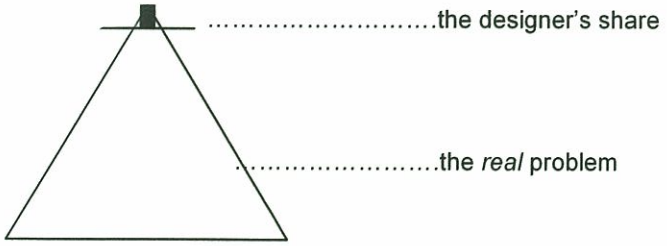
The lack of social engagement in design can be shown by the following diagram:



THE DESIGN PROBLEM

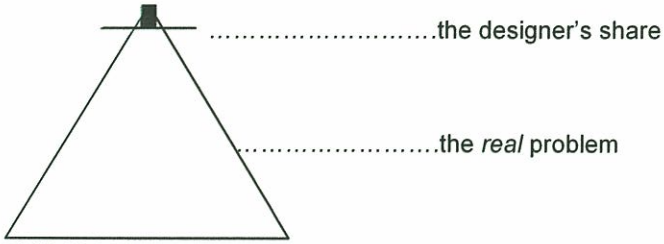
If we equate the triangle to a design problem, we can see that industry and designers are concerned only with the tiny top portion, without addressing themselves to real needs. We designers are captives of the industry that hires us to solve the problems it is concerned with, in pursuit of profit.

The next figure is identical to the first, except that for "Design Problem" we have substituted "Country". If we let the entire triangle stand for the Sudan, we can see its aptness. Nearly all such countries have their wealth concentrated in the hands of a small group of "absentee landlords". Design is a luxury enjoyed by a small clique that forms the technological, moneyed and cultural elite of each nation. The native population that lives in villages such as Attawa has no shelter or schools or hospitals that have been within stone-throwing distance of a designer's workstation.



A COUNTRY

The third triangle is identical to the first and second. But again we have changed labels. Now we call it the "World". Can there be substantial doubt that the peoples of this world are not served substantially by designers, except in largely frivolous ways?



The world is shrinking in this age of globalization, and I sit in Mumbai designing a hospital in a village in a continent that I have never set foot on, in all probability never will, employed by a multinational company that could not care less for the health or well-being of Attawaites, bidding for a government contract of which probably the money allotted to only a trickle will find its way into the actual facility. Ronan Keating has now reached a song called "Life is a Rollercoaster" which goes:

"...life is a rollercoaster, just gotta ride it..."

It's one of his hits, and as I get lost in the beat, body swaying and singing along, suddenly Attawa seems a world away, and I'm thinking, the working days almost over, time to wind up, go home, put my feet up with a tall, cool drink beside me and crank up the volume, and ride the rollercoaster, it's going upwards for me at present, amen.

Like we used to say at IIT, a lifetime back, "...where's the juice, man, where's the juice?"

I doubt it's in this proposed healthcare facility in the Sudan. Nothing juicy there. Where's the remote? The volume is way too low for me tonight.

Similarities Between A Crisis in the ER & Healthcare Architecture Design Theory:
Surely You're Joking, Mr. Varawalla?

While I'm hooked into reviewing books and drawing tenuous connections between their content and healthcare architecture, let me do it one more time with an excellent book I read lately, "*Blink*" by Malcolm Gladwell.

Blink is a book about thinking on your feet, as the blurb at the rear says, "a book about how we think without thinking...in the blink of an eye." The book claims to reveal that the best decision makers are not those who agonize over decisions, but those who have perfected the art of "thin slicing" – knowing the very few things that matter.

Gladwell claims that never again will you think about thinking in the same way. Well, lets test that. I'm going to quote now at length from the book, apologies are due to Gladwell as it is heavily edited, but please buy the book if you are interested to read the entire account. It is available at all fine bookstores, displayed prominently. I give you, dear reader, Malcolm Gladwell:

A Crisis in the ER

On West Harrison Street in Chicago, there is an ornate, block-long building designed and built in the early part of the last century. This was the home of Cook County Hospital. It was here that the world's first blood bank opened, where cobalt-beam therapy was pioneered, where surgeons once reattached four severed fingers, and where the trauma center was so famous — and so busy treating the gunshot wounds and injuries of the surrounding gangs — that it inspired the television series ER. In the late 1990s, however, Cook County Hospital started a project that may one day earn the hospital as much acclaim as any of those earlier accomplishments. Cook County changed the way its physicians diagnose patients coming to the ER complaining of chest pain.

Cook County's big experiment began in 1996, a year after a remarkable man named Brendan Reilly came to Chicago to become chairman of the hospital's Department of Medicine. The institution that Reilly inherited was a mess. As the city's principal public hospital, Cook County was the place of last resort for the hundreds of thousands of Chicagoans without health insurance.

The list of problems Reilly faced was endless. But the Emergency Department (the ED) seemed to cry out for special attention. Because so few Cook County patients had health insurance, most of them entered the hospital through the Emergency Department. There were long lines down the hall. The rooms were jammed. A staggering 250,000 patients came through the ED every year.

"A lot of times," says Reilly, "I'd have trouble even walking through the ED. It was one gurney on top of another. There was constant pressure about how to take care of these folks. The sick ones had to be admitted to the hospital, and that's when it got interesting. It's a system with constrained resources. How do you figure out who needs what? How do you figure out how to direct resources to those who need them the most?"

But from the beginning, the question of how to deal with heart attacks was front and center. A significant number of those people filing into the ED — on average, about thirty a day — were worried that they were having a heart attack. And those thirty used more than their share of beds and nurses and doctors and stayed around a lot longer than other patients. Chest-pain patients were resource-intensive. The treatment protocol was long and elaborate and — worst of all — maddeningly inconclusive.

A patient comes in clutching his chest. A nurse takes his blood pressure. A doctor puts a stethoscope on his chest and listens for the distinctive crinkling sound that will tell her whether the patient has fluid in his lungs — a sure sign that his heart is having trouble keeping up its pumping responsibilities. She asks him a series of questions: How long have you been experiencing chest pain? Where does it hurt? Are you in particular pain when you exercise? Have you had heart trouble before? What's your cholesterol level? Do you use drugs? Do you have diabetes? Then a technician comes in, pushing a small device the size of a desktop computer printer on a trolley. She places small plastic stickers with hooks on them at precise locations on the patient's arms and chest. An electrode is clipped to each sticker, which "reads" the electrical activity of his heart and

prints out the pattern on a sheet of pink graph paper. This is the electrocardiogram. In theory, a healthy patient's heart will produce a distinctive — and consistent — pattern on the page that looks like the profile of a mountain range. And if the patient is having heart trouble, the pattern will be distorted. Lines that usually go up may now be moving down. Lines that once were curved may now be flat or elongated or spiked, and if the patient is in the throes of a heart attack, the ECG readout is supposed to form two very particular and recognizable patterns. The key words, though, are "supposed to." The ECG is far from perfect. Sometimes someone with an ECG that looks perfectly normal can be in serious trouble, and sometimes someone with an ECG that looks terrifying can be perfectly healthy. There are ways to tell with absolute certainty whether someone is having a heart attack, but those involve tests of particular enzymes that can take hours for results. And the doctor confronted in the emergency room with a patient in agony and another hundred patients in a line down the corridor doesn't have hours. So when it comes to chest pain, doctors gather as much information as they can, and then they make an estimate.

The problem with that estimate, though, is that it isn't very accurate. One of the things Reilly did early in his campaign at Cook, for instance, was to put together twenty perfectly typical case histories of people with chest pain and give the histories to a group of doctors — cardiologists, internists, emergency room docs, and medical residents — people, in other words, who had lots of experience making estimates about chest pain. The point was to see how much agreement there was about who among the twenty cases was actually having a heart attack. What Reilly found was that there really wasn't any agreement at all. The answers were all over the map. The same patient might be sent home by one doctor and checked into intensive care by another. "We asked the doctors to estimate on a scale of zero to one hundred the probability that each patient was having an acute myocardial infarction [heart attack] and the odds that each patient would have a major life-threatening complication in the next three days," Reilly says. "In each case, the answers we got pretty much ranged from zero to one hundred. It was extraordinary."

The doctors thought they were making reasoned judgments. But in reality they were making something that looked a lot more like a guess, and guessing, of course, leads to mistakes. Somewhere between 2 and 8 percent of the time in American hospitals, a patient having a genuine heart attack gets sent home — because the doctor doing the examination thinks for some reason that the patient is healthy. More commonly, though, doctors correct for their uncertainty by erring heavily on the side of caution. As long as there is a chance that someone might be having a heart attack, why take even the smallest risk by ignoring her problem?

"Say you've got a patient who presents to ER complaining of severe chest pain," Reilly says. "He's old and he smokes and he has high blood pressure. There are lots of things to make you think, Gee, it's his heart. But then, after evaluating the patient, you find out his EGG is normal. What do you do? Well, you probably say to yourself, "This is an old guy with a lot of risk factors who's having chest pain. I'm not going to trust the EGG." In recent years, the problem has gotten worse because the medical community has done such a good job of educating people about heart attacks that patients come running to the hospital at the first sign of chest pain. At the same time, the threat of malpractice has made doctors less and less willing to take a chance on a patient, with the result that these days only about 10 percent of those admitted to a hospital on suspicion of having a heart attack actually have a heart attack.

This, then, was Reilly's problem. He was at Cook County. He was running the Department of Medicine on a shoestring. Yet every year, the hospital found itself spending more and more time and money on people who were not actually having a heart attack. A single bed in Cook County's coronary care unit, for instance, cost roughly $2,000 a night — and a typical chest pain patient might stay for three days — yet the typical chest pain patient might have nothing, at that moment, wrong with him. Is this, the doctors at Cook County asked themselves, any way to run a hospital?

Reilly's first act was to turn to the work of a cardiologist named Lee Goldman. In the 1970s, Goldman got involved with a group of mathematicians who were very interested in developing statistical rules for telling apart things like subatomic particles. Goldman wasn't much interested in physics, but it struck him that some of the same mathematical principles the group was using might be helpful in deciding whether someone was suffering a heart attack. So he fed hundreds of cases into a computer, looking at what kinds of things actually predicted a heart attack, and came up with an algorithm — an equation — that he believed would take much of the guesswork out of treating chest pain. Doctors, he concluded, ought to combine the evidence of the ECG with three

of what he called urgent risk factors: (i) Is the pain felt by the patient unstable angina? (2) Is there fluid in the patient's lungs? and (3) Is the patient's systolic blood pressure below 100?

For each combination of risk factors, Goldman drew up a decision tree that recommended a treatment option. For example, a patient with a normal ECG who was positive on all three urgent risk factors would go to the intermediate unit; a patient whose ECG showed acute ischemia (that is, the heart muscle wasn't getting enough blood) but who had either one or no risk factors would be considered low-risk and go to the short-stay unit; someone with an ECG positive for ischemia and two or three risk factors would be sent directly to the cardiac care unit — and so on.

Goldman worked on his decision tree for years, steadily refining and perfecting it. But at the end of his scientific articles, there was always a plaintive sentence about how much more hands-on, real-world research needed to be done before the decision tree could be used in clinical practice. As the years passed, however, no one volunteered to do that research — not even at Harvard Medical School, where Goldman began his work, or at the equally prestigious University of California at San Francisco, where he completed it. For all the rigor of his calculations, it seemed that no one wanted to believe what he was saying, that an equation could perform better than a trained physician.

But Reilly shared none of the medical community's qualms about Goldman's findings. He was in a crisis. He took Goldman's algorithm, presented it to the doctors in the Cook County ED and the doctors in the Department of Medicine, and announced that he was holding a bake-off. For the first few months, the staff would use their own judgment in evaluating chest pain, the way they always had. Then they would use Goldman's algorithm, and the diagnosis and outcome of every patient treated under the two systems would be compared. For two years, data were collected, and in the end, the result wasn't even close. Goldman's rule won hands down in two directions: it was a whopping 70 percent better than the old method at recognizing the patients who weren't actually having a heart attack. At the same time, it was safer. The whole point of chest pain prediction is to make sure that patients who end up having major complications are assigned right away to the coronary and intermediate units. Left to their own devices, the doctors guessed right on the most serious patients somewhere between 75 and 89 percent of the time. The algorithm guessed right more than 95 percent of the time. For Reilly, that was all the evidence he needed. He went to the ED and changed the rules. In 2001, Cook County Hospital became one of the first medical institutions in the country to devote itself full-time to the Goldman algorithm for chest pain, and if you walk into the Cook County ER, you'll see a copy of the heart attack decision tree posted on the wall.

Why is the Cook County experiment so important? Because we take it, as a given, that the more information decision makers have, the better off they are. If the specialist we are seeing says she needs to do more tests or examine us in more detail, few of us think that's a bad idea. But what does the Goldman algorithm say? Quite the opposite: that all that extra information isn't actually an advantage at all; that, in fact, you need to know very little to find the underlying signature of a complex phenomenon. All you need is the evidence of the EGG, blood pressure, fluid in the lungs, and unstable angina.

That's a radical statement. Take, for instance, the hypothetical case of a man who conies into the ER complaining of intermittent left-side chest pain that occasionally comes when he walks up the stairs and that lasts from five minutes to three hours. His chest exam, heart exam, and EGG are normal, and his systolic blood pressure is 165, meaning it doesn't qualify as an urgent factor. But he's in his sixties. He's a hard-charging executive. He's under constant pressure. He smokes. He doesn't exercise. He's had high blood pressure for years. He's overweight. He had heart surgery two years ago. He's sweating. It certainly seems like he ought to be admitted to the coronary care unit right away. But the algorithm says he shouldn't be. All those extra factors certainly matter in the long term. The patient's condition and diet and lifestyle put him at serious risk of developing heart disease over the next few years. It may even be that those factors play a very subtle and complex role in increasing the odds of something happening to him in the next seventy-two hours. What Goldman's algorithm indicates, though, is that the role of those other factors is so small in determining what is happening to the man right now that an accurate diagnosis can be made without them. In fact that extra information is more than useless. It's harmful. It confuses the issues. What screws up doctors when they are trying to predict heart attacks is that they take too much information into account. The problem of too much information also conies up in studies of why doctors sometimes make the mistake of missing a heart attack entirely — of failing to

recognize when someone is on the brink of or in the midst of a major cardiac complication. Physicians, it turns out, are more likely to make this kind of mistake with women and minorities. Why is that? Gender and race are not irrelevant considerations when it comes to heart problems; blacks have a different overall risk profile than whites, and women tend to have heart attacks much later in life than men. The problem arises when the additional information of gender and race is factored into a decision about an individual patient. It serves only to overwhelm the physician still further. Doctors would do better in these cases if they knew less about their patients — if, that is, they had no idea whether the people they were diagnosing were white or black, male or female.

It is no surprise that it has been so hard for Goldman to get his ideas accepted. It doesn't seem to make sense that we can do better by ignoring what seems like perfectly valid information. "This is what opens the decision rule to criticism," Reilly says. "This is precisely what docs don't trust. They say, “This process must be more complicated than just looking at an EGG and asking these few questions. Why doesn't this include whether the patient has diabetes? How old he is? Whether he's had a heart attack before?' These are obvious questions. They look at it and say, “This is nonsense, this is not how you make decisions.'" There is a kind of automatic tendency among physicians to believe that a life-or-death decision has to be a difficult decision. "Doctors think it's mundane to follow guidelines," he says. "It's much more gratifying to come up with a decision on your own. Anyone can follow an algorithm. There is a tendency to say, 'Well, certainly I can do better. It can't be this simple and efficient; otherwise, why are they paying me so much money?'" The algorithm doesn't feel right.

Healthcare Architecture Design Theory

I have also wondered through many years of doing healthcare architecture why people pay me so much money to do something I would do for nothing (if I couldn't find a sucker to pay me to do it!). Healthcare architecture (or any kind of design) is best done *fast*…in a “creative rush” so to speak. The design brief should be read late in the working day, towards evening and then left alone, home to dinner and music (avoid the TV for just one evening), early meal, get to bed before midnight. Brisk early morning walk, cold shower (don't make the mistake of going to the office – nothing destroys incipient brilliant design like rush-hour traffic…) brush the breadcrumbs on the breakfast table aside, A2 paper and soft pencil and ***BLINK!***

When your eyes are open again, you should see your hospital on that paper. OK, I'll accept that's exaggerated for dramatic effect, but you get the message. Sleep culls from the design brief only the information you need, refers all these important design imperatives to your stomach (…gut feel…), and all that remains is for you to get in touch with your stomach, it will show you the Way.

If I were to take a page out of Goldman's book and try to compile Hussain's “urgent design factors” (admittedly without the mathematics, computers or masses of data), but with the benefit of years of healthcare experience design, I would come up with: (1) secondary or tertiary level care (2) charitable or for-profit (3) total area/beds envisaged – to limit it to three, like him.

Listen to me: it's not about the relationships between or within medical departments, it's not about how many OT's or whether we have to cater for an MRI or not. The first you'll find in textbooks, the second hidden in the pages of your brief. Such information should not even be in your conscious mind at the instant of the above-mentioned *blink!* That kind of information I think of as clutter. Even better than storing it in the attic is to just throw it away.

There is a tendency among architects to think that it is very difficult to design a healthcare facility (as opposed to most other building types), because all they are seeing is the amount of “clutter” you need to accumulate to design one. But you'll find the necessary clutter in the (attic…Neuferts Architect's Data). OK, I'll grant you it needs a certain amount of knowledge, but more importantly you need to (as Gladwell says) harness “the power of thinking without thinking.”

You need to know how to ***blink!***

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Complexity and Contradiction in Healthcare Architecture?

A couple of weeks back our firm was commissioned to design a Children's Orthopedic Hospital in Mumbai (Bombay), India. At about the same time an architect friend of mine presented me with a copy of Robert Venturi's book "Complexities and Contradictions in Architecture", published by the Museum of Modern Art in New York in 1966. I started attending architectural school in 1974, and till a few days back had not read this book. Exactly how shameful this is will be evident after reading the next paragraph, which briefly describes the importance of this book on architectural thought prevailing at the time of it's publication, and gives some information on Robert Venturi (an architect) and his work.

Robert Venturi was born in 1925 in Philadelphia. He embarked on his career in the intellectual climate of the East Coast of America. He has taught at the University of Pennsylvania and at Yale, and at other institutions. His book introduced an epoch-making change and influenced the development of architecture more than any other treatise in the last third of the 20th century. His oeuvre is varied. It includes development projects like villas, museums and supermarkets, but also beach houses and research institutes. Venturi borrowed from Pop Art for such projects as the shops for the supermarket chains BEST and BASCO, which were built in the mid-1970's, and are nothing more than "decorated sheds." We could characterize his style as "ironic Classicism." A sketch done by him in '78 on the yellow tracing paper referred to fondly as 'bumwad" in the '90's in America, shown here, illustrates this "irony."

Mr. Venturi, to the best of my knowledge, has never designed a healthcare facility. If he had I am sure it would have come to my admittedly uninformed knowledge somehow, as I am confident it would have been spectacular. We may be working with an architect from Australia on our Children's Hospital, but after reading Mr. Venturi's book I am emboldened to fantasize working with him on what would be his first fantasy healthcare project.

In his book, he acknowledges that his premise is not objectivity, but artistic license; he examines those aspects of architecture that interest him, namely, complexity and contradiction. He repeatedly refers to literature and art, where variety and contradiction are indispensable. He cites Pop Art as a good example. Pop Art works with changing contexts and dimensions, like this painting by Pop Artist Roy Lichtenstein titled, appropriately, "Whaam!" Drawing on popular culture, Lichtenstein reworked the comic strip to the scale of history paintings. By the simple device of enlarging the canvas to billboard size, and using the themes and language of pulp literature, he questioned the relationship between "fine art", represented by easel painting, and mass culture.

Suppose we were to question the relationship between "fine architecture", represented by our Mumbai concrete and glass efforts, and the world as seen through the eyes of a handicapped child?

Mr. Venturi tries to cross the borders between vulgar and high art and like Pop Art he extracts familiar objects out of their usual frame of reference and thereby exposes them to new meanings. It is his central concern, as theorist and architect, to rediscover architecture as a bearer of symbols.

If I were to attempt to design a healthcare facility for handicapped children with Mr. Venturi's help, both of us would need to understand better the difference in perception of reality as it exists for us and as it exists for a handicapped child. What symbols would we bear with our architecture as our gift to these children touched by God? For Mr. Venturi, Pop Art pointed the way by opening his eyes to everyday banality as a source of vitality, multiplicity and color. For me, schizophrenia has pointed the way by opening my eyes to the pain of living in a world that rushes by those of us who are differently enabled. Mr. Venturi declared that its pure existence was justification enough for the commonplace and banal, and it was in this light he coined the phrase "Main Street is almost alright." Approaching 50 years, half of them "insane", I am only now finding it in me to declare that my existence is justification enough for this sane society to stop and care.

What phrase could the two of us together coin to give us direction in our fantasy design effort?

Maybe, instead of a phrase, a prayer: "Cry for them, Jesus, children of a lesser god."

Flexible Design Principles in Healthcare Facility Planning
vis-à-vis
Adaptive Alternative Usage

- Healthcare facilities as designed and built in India today would be resistant to change of use
- However, "flexibility" as a design objective in contemporary healthcare facility design worldwide is of paramount importance
- This flexibility refers only to flexibility of change of alternative diagnostic, therapeutic and interventional medical procedures
- Inpatient accommodation still remains relatively inflexible even today

- Flexibility in terms of planned adaptive alternative usage would be a different concept altogether
- This concept is not even addressed in current architectural debate or writing, it is a non-issue

- What could be a possible planned alternative usage for a typical 250-bed multi-specialty hospital?
- To answer this question, it is necessary to understand the four broad constituent parts of such a hospital
    - Inpatient accommodation
    - Diagnostic/Therapeutic/Interventional medical areas
    - Public and Support areas
    - Building Services and Staff areas

- Inpatient Accommodation: It's purpose and characteristics
    - Houses inpatients before and after medical procedures typically in single, twin-share or 4 to 6 bed wards
    - Major architectural characteristics are the need for an external wall window for view and natural light and the need for attached toilets (in today's healthcare market)
    - Accessed through a minimum 8'-0" wide corridor necessary for stretcher movement
    - Typically occupies the uppermost floors of the hospital

- Diagnostic/Therapeutic/Interventional Medical Facilities: Their purpose and characteristics
    - To perform medical procedures and investigations, for consultation and therapy
    - Major architectural characteristics are rooms custom-designed for hi-tech equipment, complex space planning needs resulting in atypical layouts, only large open areas being waiting areas, if at all
    - Typically occupy the Ground to Second or Third Floor of the hospital

- Public and Support areas: Their purpose and characteristics
    - Public areas such as the Main Entrance Lobby, Cafeteria and Auditorium
    - Support areas such as Main Kitchen, Laundry and Central Sterilization
    - Major architectural characteristics are easily understood for Public areas, Support areas are largely mechanized
    - Support areas such as Administration offices, IT and Communication hubs
    - Typically scattered throughout the above-mentioned lower floors, some areas may be in the basement

- Building Services and Staff areas: Their purpose and characteristics
    - Building Services such as HVAC Plant room, Electrical room etc.
    - Major architectural characteristics are that they are typically over-sized as air-conditioning and electrical loads are higher than other common building types
    - Typically housed in the basement or in a separate service building, site permitting

- Planned Alternative Usages possible:
    - Hotel
    - Combination of Service Apartments (upper floors) and Hypermarket (lower floors)
    - Self-contained offices (upper floors) of up to 350 square feet BUA including attached toilet and Software Park (lower floors)
    - Workability of alternative usage will be a location specific choice

- What would be the impact on initial planning of the hospital for such planned adaptive reuse?
    - The upper floors, i.e. the inpatient accommodation, could be planned to be adaptively reused with little to no planning impact on the hospital inpatient rooms initially provided, for the above-mentioned new facilities.
    - The lower floors would need major planning constraints imposed on the initial hospital design to work for the adaptive reuse mentioned above
    - Building services should present no hindrance to this planned reuse as they would be over-designed for any possible reuse
    - Provision for parking would need to be considered for the alternative use planned from the onset

- Typical Planning grid for hospitals in India - approx. 4.0 M x 8.0 M (i.e. 13'-0" x 26'-0")
    - One planning grid would contain one inpatient room + attached toilet
    - Two planning grids together would form the structural grid i.e. 8.0 M x 8.0 M
    - This planning grid is derived from the configuration of the inpatient floors

- The area requirement for the total hospital (BUA for 250-bed multi-specialty) will be 1000 to 1200 square feet / inpatient bed (depending on market positioning and pricing). This area would be all inclusive, except for covered parking.

- How then would we plan the lower floors to make this adaptive reuse possible?
    - A possible solution could be systematized infrastructure and building structures (e.g., those used at McMaster University Medical Center in Hamilton, Ontario)
    - The concept is one of "universal space". This consists of large, modular blocks of space with integrated structure/ service shafts at regular intervals and a system of building services layout that would incorporate "reserved rights-of way" for all building services so that they could be delivered to any point in the building.
    - Slabs would be designed to support walls at all points, as is standard practice in hospital design anyway.

- What would be the cost implications of this built-in flexibility for adaptive reuse?
  - In the Indian context, it could be high.
  - It involves the concept of interstitial space to accommodate a super-grid or large, column-free space with limited structural constraints on the planning and changes to the floor plates
  - The increased capital cost must seem justified to provide the organization with this type of flexibility

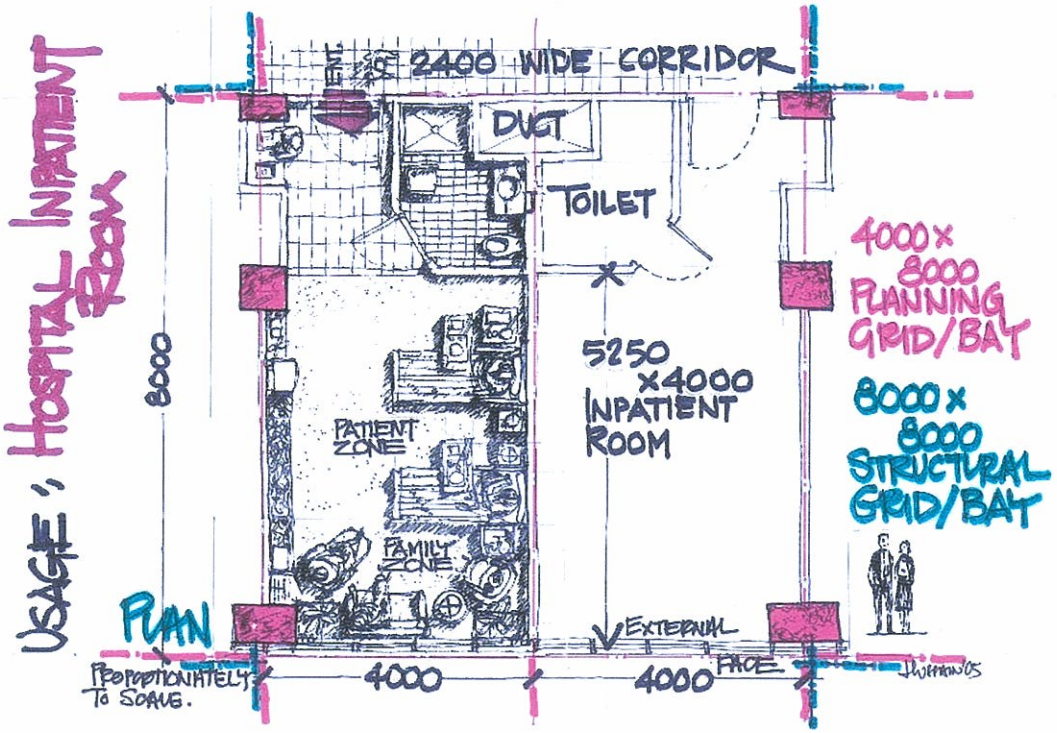
- How else could we find solutions to this problem?
  - If we could decide on the type of adaptive reuse that is desired, both "before" and "after" designs could be prepared prior to construction and the cost implications could be quantified for feedback into the design process until a satisfactory design/initial cost for the desired flexibility is achieved
  - If the site permits, selective demolition combined with new construction could be an answer, but this approach would be site specific, could not be a generalized solution

- In conclusion…
  - Remember, in the long run, operating costs will quickly far exceed capital costs. Flexibility provided for adaptive reuse works as flexibility for a successfully running hospital as well, which needs it just as much, if not more.
  - In the ideal world, the perfect balance can be found between functionality of the space and the generic parameters that afford its flexibility. Construction rupees can be optimized. In the real world, this point of balance may seem elusive, but teamwork, attention to detail, and open communications throughout the planning and design process will help us close in on our target. Our multi-disciplinary planning and design team possesses the knowledge and skills necessary to create the dynamic and long-term solution that is desired.

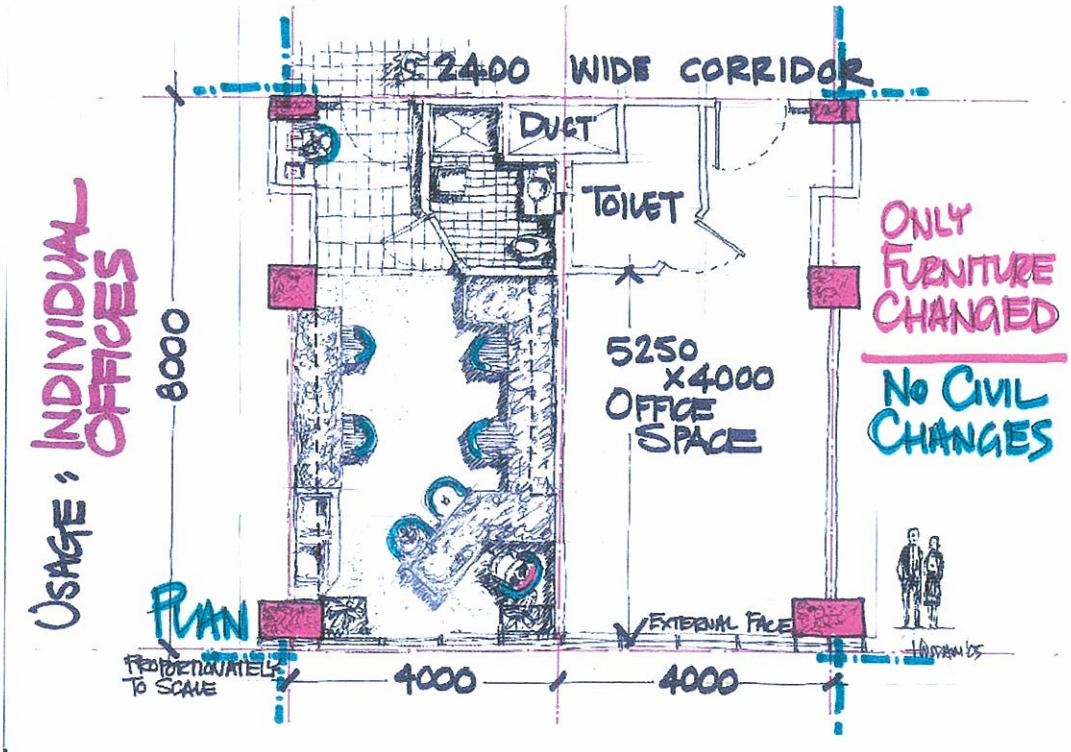
Appendix

- Typical Building Services Requirements for a 250-bed Multi-Specialty Hospital
  - Water Tank capacity = 800 to 1000 liters 1BED/DAY
  - 2000 to 3000 KVA of power plus/minus 100% D.G. Set back-up
  - HVAC = thumb rule calculation 1 TR / 200 square feet BUA. HVAC requirements will be more complex in terms of 100% fresh air requirements, HEPA (High Energy Particulate Arrestors) filters for maintenance of sterile conditions in the OT Suite, Laboratories, Intensive Care Units and Central Sterilization. Installed HVAC capacity will be in excess for alternative usages.
  - Typically, hospitals do not require Hi-Speed Broadband connectivity that would be required for alternative usages like Software Parks or Office space.

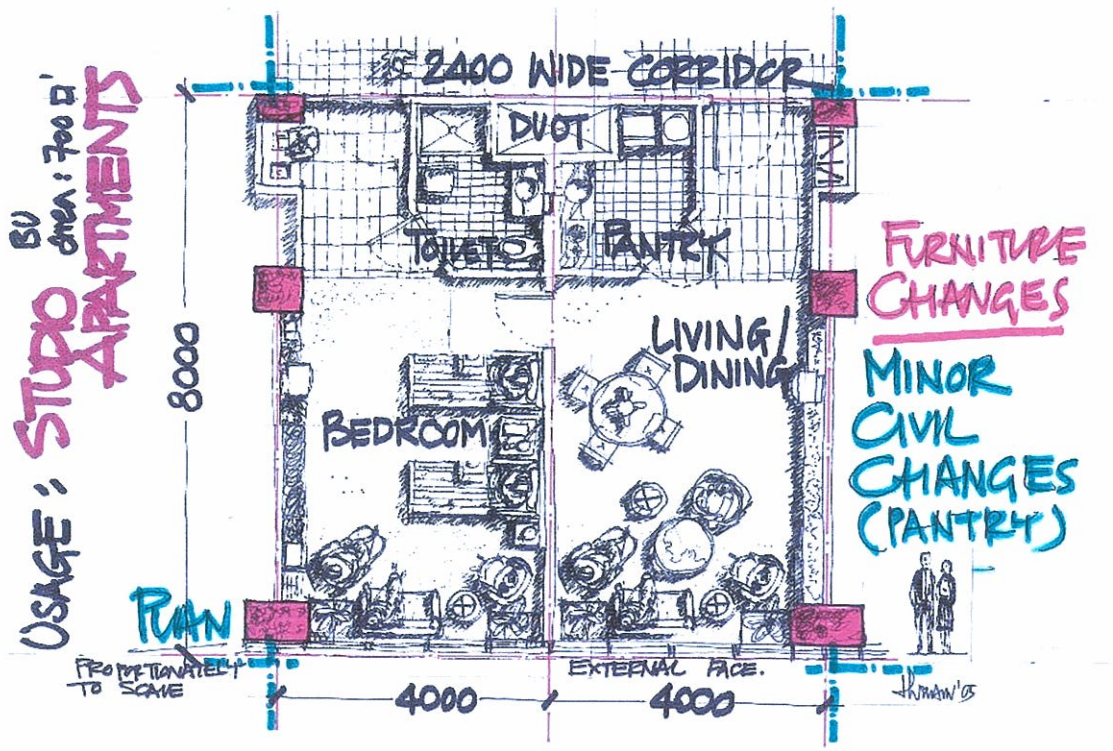
INITIAL USAGE: HOSPITAL INPATIENT ROOM



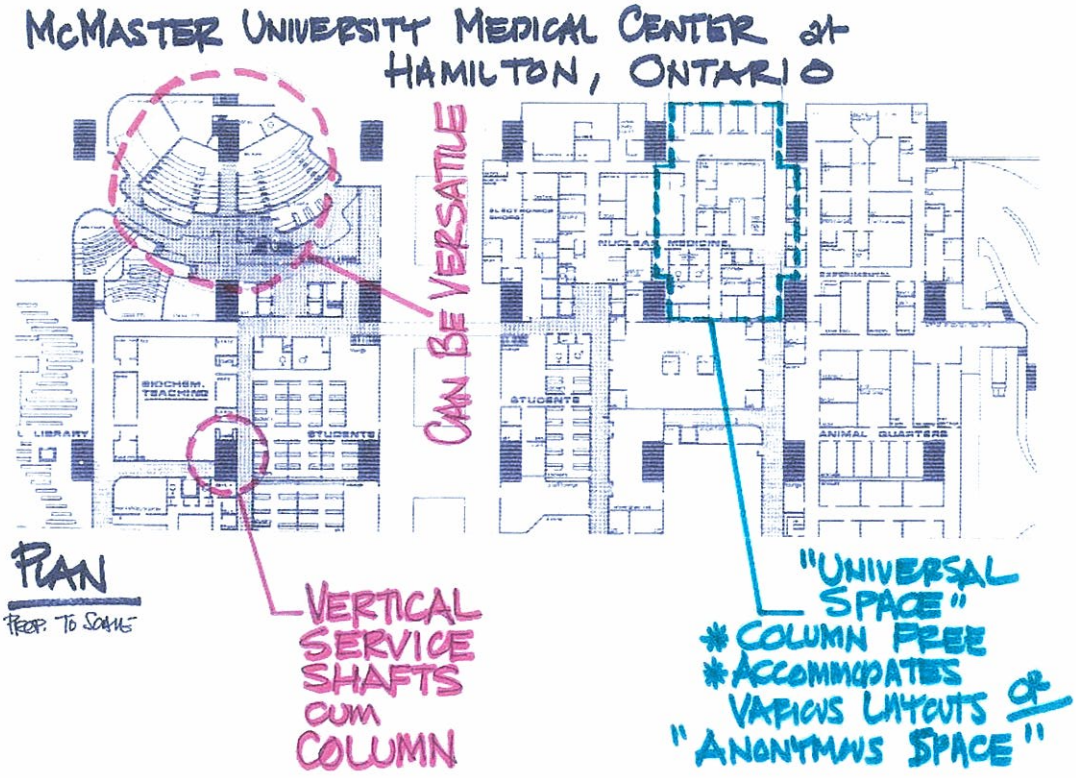
ALTERNATIVE USAGE 1: INDIVIDUAL OFFICES



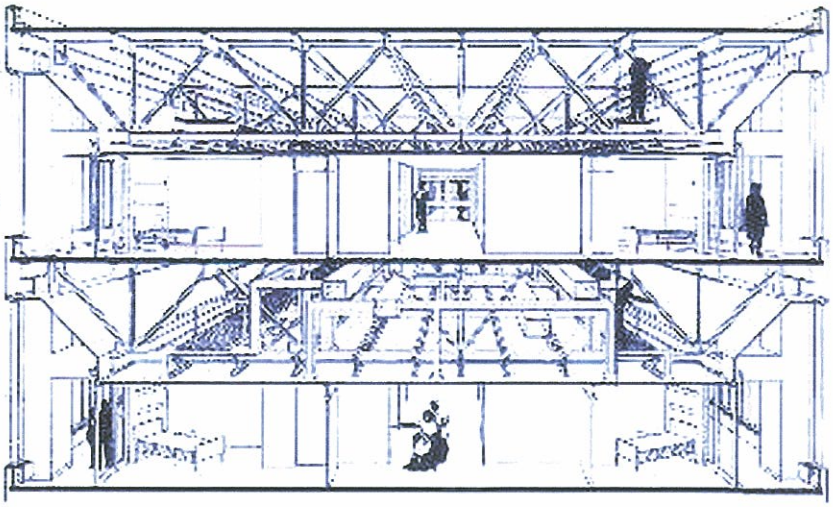
ALTERNATIVE USAGE 2: STUDIO APARTMENTS



CONCEPT OF: 'UNIVERSAL SPACE'



CONCEPT OF: 'INTERSTITIAL SPACE'



Healthcare Architecture (as seen through) Ian Ritchie's Eyes

Ian Ritchie was born in Hove on the south coast of England. He studied architecture at the Polytechnic of Central London where he graduated with distinction in 1972. He worked with a number of prominent architects, and in 1981 he formed Ian Ritchie Architects and co-founded the special design engineering firm of Rice Francis Ritchie (RFR) in Paris. Peter Rice is an engineer, and Martin Francis is an industrial designer and naval architect.

Ian Ritchie's attitude towards the size and organization of his design office sounds very simple. He claims this is 'about the number of people who can basically communicate well together'. The number five figures strongly in his calculations. He feels groups of up to five work well on a design. To cut short the story, the result is a staff of 20 to 25 people who, as Ian says 'can actually all discuss around a table, especially when someone has a birthday'.

Heading the architectural design section of a healthcare consulting firm as I am, I too feel that smaller groups of people work better and with more intensity. Alienated as I am, there is actually only one person in the firm with whom I can communicate well (or rather excellently). S/he is not even an architect, not the big boss and not even one of my fellow directors. Odd, to put it mildly. Eccentricity is flaunted by many designers, and not only in their designs. My designs are anything but eccentric, models of rationality, rather. It's more the clothes I wear and the company I keep. Anyway, peace.

Robbie Williams sings in his song *Better Man:*

"…and I'm doin'…the best I can…to be a better man."

No surprises there. I too am trying to improve the quality of my wardrobe. I bought four long sleeved shirts recently, one of which can be best described as 'funky cool', but what the hell, three out of four ain't bad.

Why are we singing along with Robbie and discussing my laundry? This article is supposed to be about healthcare architecture seen through Ian Ritchie's eyes. Let's pay that some lip service, at least.

For Ian the design process begins with an attempt to construct a working relationship with the client. Before even discussing architecture, he tries to lead his client into his process. He says:

"It is very rare for a client to commission a building more than once in his life, except in the commercial sector. There is nobody who ever trains a single client on how to commission or deal with an architect. The first move is to talk through the brief, understand what has led to it, understand fundamentally what it is about."

For me the design process begins with trying to find the time to design the damn thing. My clients are usually financiers and/or doctors wanting to build corporate hospitals, and the brief is easy to understand, fundamentally it is about making money through providing healthcare services. Jokes apart, that is more easily said than done. Financial planning has to precede any ideas about buildings. When I look at rows of figures they seem to be dancing to some kind of presumably divine music, so obviously I am only marginally involved in doing this financial planning. Fortunately for our clients there are good people in the firm who do this very well.

Technology is an important factor in the financial planning and the architectural design of healthcare facilities. Ritchie, however, does not feel that technology is a design generator for him. He has clearly been asked about this before and describes his relationship with technology thus:

"When people ask me this question I use an analogy. I describe this beautiful parrot sitting on my shoulder – multicolored, very beautiful – called 'technology'. Very often he leaps off the shoulder onto the paper and shits all over it before we've actually stared thinking and you have to get hold of him and stick him back up there. He is tame, he does behave himself and he doesn't always end up in the project at all, but he's there and we talk to him all the time."

All I can say is it's a good thing he jumps onto the paper to do his thing, otherwise we would be discussing Ian Ritchie's laundry along with mine, and his would not be 'funky/cool'.

What does healthcare architecture have to do with beautiful parrots doing what they do? I'll try to tell you. Technology can indeed do what the parrot with the same name does to your best laid plans for your healthcare facility, unless tamed. CT Scans are to be thought of as machines that help diagnose illnesses in much the same way your GP takes your pulse, and not as ravenous monsters that demand to be fed with warm bodies. The architecture, the interior design and the people the patient meets on his way to this monster need to be as reassuring and generate the same warmth and concern as the pulse-taking GP. Ian is right about that, and very well put too, he has a way with words, some people do. It's an acquired gift.

Ian has a parrot on the other shoulder too:

"There's a little one on the other shoulder called 'art' or 'poetry', he's very powerful squeaks a lot but he's not got the nerve of this one yet and that's because we are still maturing into that field. It's only been a few years since we've been working hard at it, so it doesn't feel comfortable yet."

That parrot's also called 'funky/cool' and whenever I wear one of the funky/cool selections available in my wardrobe s/he sits on my shoulder too. Doesn't shit on the paper or create laundry. S/he's a parrot that is chilled out and we need Robbie's help again in describing how s/he makes me feel:

"…so high you'll be flyyy..yyy…ing!"

From his song titled *She's the One.*

For Ian Ritchie it is the technology or function of the building which brings order to the art or poetry. For me it is music that brings order to my life. Living an orderly life then enables me to bring to bring technology, art, function (poetry?...working hard at it…) and above all order to my healthcare facility.

In conclusion, if you're trying to design a healthcare facility (or, for that matter, any kind of building) attempt to keep bird-shit off your paper. Keep both parrots on your shoulder, where they belong.

And, you know, if either of them has just gotta go, it's only laundry, after all.

The WOW! Factor in Healthcare Architecture

Healthcare architecture, to most (almost all) architects, is considered to be a dry and technical field of specialization within architecture as a whole. They feel it is the epitome of that architectural adage "Form follows Function", the very f-word for today's breed of young architects liberated from their modernist corsets, so to speak.

Healthcare architecture in the 21st century, however, like the liberated young architects mentioned above, has burnt its proverbial bra, and is now hanging out with an as cool and with-it crowd as any other type of architecture, swinging really.

Big Business today is discovering the merits (and profitability) of being hip and plugged-in. Tom Peters, a Big Business Guru, has as the logo of Tom Peters Company a red exclamation mark! He thinks it (the red exclamation mark) represents the various moods of WOW, a business concept we will discuss later. He thinks

"…it's as powerful…though not (yet) as valuable…as the Nike swoosh."

He goes on to beg us readers of his book "Talent" not to steal his logo, but encourages us to steal the "Spirit of the Logo." The logo of my healthcare architecture firm is not a red exclamation mark, but I wish it was. I think it would be a perfect complement to the traditional red cross of the hospitals we design; I think these hospitals are swinging and project with their external and internal appearance the WOW! factor that Tom is talking about.

What is the WOW project? To quote Tom, they are:

- Projects that Matter.
- Projects that make a Difference.
- Projects that you can Brag About…forever.
- Projects that transform the Enterprise.
- Projects that Take Your Breath Away.
- Projects that make you/me/us/"them" Smile
- Projects that Highlight the Value That You Add…and Why…You Are Here on Earth (Yes. That Big.)
- WOW Projects are…not hype.
- WOW Projects are…an Absolute Necessity.

The great ballet choreographer Sergei Diaghilev routinely begged his prima ballerinas: "Astonish me!"

When I walk into the office at 11.00 AM I ask my children (which is how I think of my so-called "junior architects") – "What impossible thing did you do before the first round of tea today?" something like what the Queen of Hearts said to Alice. The Boss, Bruce Springstein, sang a song titled "Blinded by the Light" which was later made famous by Manfred Mann and his Earth Band, which goes something like:

"Mama always told me not to look into the sights of the sun…
But Mama…that's where the fun is…"

So I can confidently add to Tom's list:

- WOW Projects are…Rock 'n Roll Projects.
- WOW Projects are…Healthcare Facilities that you have Designed that Take your Breath Away
- WOW Projects are…Healthcare Facilities that you have Designed that you can Brag About…forever.
- WOW Projects are…when you Look into the Sun and Have Fun, Jiving into the Light.

WOW projects are 21st century Healthcare Facility Projects.

OK, that begs the question: Why?

Forgive me as I quote at length from a book I am writing on some aspects of healthcare facility design. The following is taken from the Introduction, and is a little bit denser reading than the above, but good stuff all the same. Time to get serious? (God forbid!)

"Healthcare architecture differs from that of most other building types in the complexity of the functional relationships between the various parts of the hospital. In residential and commercial building types the design brief is relatively easy to understand and cater to. Healthcare architecture, however, requires specialized knowledge on the part of the architect and the supporting engineering team. The lack of such trained professionals results in many of the hospitals in India today being ill-conceived and costing their promoters much more in construction and in inefficient operation than they need to. Eventually it is the patient who bears the brunt of this incompetence through lack of quality in the medical care provided resulting in physical and mental discomfort and increased cost of hospitalization.

Specialized healthcare architecture is a field that is still in its infancy in India. In a recent article on the state of healthcare consulting in India in Express Healthcare and Management, Rita Dutta writes:

"The burgeoning Rs-800-crore-strong hospital consultancy sector is making its presence felt from Dharamsala to Delhi, penetrating even Raigarh to Rai Bareilley."

800 crores notwithstanding, specialized architectural firms within this sector could be, to the best of my knowledge, counted on the fingers of less than one hand.

Rita goes on to write:

"While the indigenous hospital consultancy sector would grow, more international firms are expected to enter the market in future. With the increasing demand for professionals qualified in hospital planning and mushrooming of institutes catering to hospital planning and design, general architects would be completely replaced by specialists in hospital architecture, feel experts."

However, this specialized field is not only about satisfying the stringent functional demands that the hospital makes on its designer. The emphasis of healthcare architecture is also on improving the quality of the healthcare setting for patient and caregivers alike. It must meet the needs of people who use such facilities in times of uncertainty, stress, and dependency on medical and paramedical staff. It must acknowledge and support patients' families and friends by providing pleasant spaces for them to wait in. At the same time the interior spaces and the external image of the hospital should project an underlying reassurance that the patient is in the hands of competent medical staff and in a technically sound healthcare facility.

In the future patients will make increasing demands on healthcare organizations. Those facilities that are designed to be most responsive to patients in terms of convenience, caring encounters, service orientation and the quality of environment will do best in meeting these new demands.

Architects are perceived as talented problem solvers. The design issue here is to find a way to deliver a high quality of care and access to medical staff and information on the patient's condition in an environment that is also highly supportive of relationships between participants in the healthcare delivery process during times of great anxiety and fear of what the future holds."

Whew! You got through that? Well, it says it all. Healthcare facility design encompasses a variety of technical, aesthetic and moral issues. Designing bedroom/kitchen/living/dining's pale in comparison. To put it in no unclear terms, I get turned on by healthcare architecture, I look into the sun, but you have to understand, as everyone knows, I am a little bit crazy. (Who's sane? Not Hussain...puns are the worst form of humor.)

The question is: How crazy are you? Are you a prima ballerina of architecture?

Then astonish me.

Should Healthcare Architecture Move "Towards Ananda"?

Omigod, I hear you say, has my favorite healthcare author lost his marbles completely? No such luck. I'm reading another great book, and I'd like to share it with you. It's titled (predictably) "Towards Ananda: Rethinking Indian Art and Aesthetics" and it's written by an artist, named Shakti Maira. Welcome to the club, Shakti, we have both wandered into writing from a visual field, and we're both giving the professionals a run for their money!

From the inside back cover blurb:

"Shakti Maira is an artist and a sculptor. He has had twenty-four one-person shows in India, the US and in Europe. His work can be found at the National Gallery of Modern Art, India, in collections belonging to leading corporate houses and in private collections around the world. Maira also writes on art, aesthetics, culture and travel for newspapers and magazines in India and abroad. He is interested in children's education and development through art, and has conducted numerous workshops in schools in the US and India. In 2005 he helped organize the "Learning through the Arts in Asia" symposium in New Delhi, and was subsequently invited by UNESCO to prepare the Asian vision statement for 'Arts in Education: Learning through the Arts". Shakti Maira lives in New Delhi."

Way to go, Shakti! I wish you ever increasing strength in your learning through the arts initiative. India has provided the world with enough software engineers and hard-working MBA's; we need to send them chilled-out artists (and architects) for a change.

I quote again, this time from the back cover. We have Anjali Ela Menon, artist, saying:

"Maira sees the central purpose of art as a precious means of transcendence. This prophetic view will probably outlast the iconoclasm and faddism that defines art and aesthetics in contemporary India."

At this point I must admit I pulled out my trusty Webster's Collegiate and I am informed that an iconoclast is 1. a person who attacks cherished beliefs or traditional institutions as being based on error and superstition. 2. a breaker or destroyer of images.

Iconoclasm then is: the action, beliefs or spirit of iconoclasts. Wow. Strong words from Ms. Menon. Art (or for that matter, architectural design) as a means of transcendence means (I think) that you go on a trip while you're doing it. At times, in my bedroom/design studio, with the rock 'n roll playing not so softly, when I'm totally focused on the layout of an inpatient floor, I stop hearing the music. Maybe that's what Maira means. The world becomes what you're doing.

Maira talks about the contemporary predicament of Indian artists, and says they are *"…pulled in opposing directions by the traditional view of art as a means of communication and the modern paradigm of "art for art's sake'…"* He talks about the *"…fracturing of the family of arts (which) has made each art form a little kingdom of specialized products to be consumed by an elite and ruled by a new class of feudal lords – the art experts."* He says it is sad when he is introduced to someone as an artist and is immediately told "I don't understand contemporary art at all." I know the feeling. When I am introduced to someone as an architect I too am saddened when the response is "My upstairs' neighbors' toilet is leaking, what can I do about it" or even worse " I want to enclose my balcony, can you regularize it for me." The best I can do is a lame "I'm not that kind of architect", which only earns me a sideways glance, as if to say, "What other kind *is* there?"

On the other hand, I stand guilty of being a specialized architect, the work I do is little understood other than by an informed group (doctors, they would have probably preferred me to use Maira's term…), not even well understood by other architects.

To get to the meaning of the title of this article (and Shakti's book), he says:

"There are two key ideas in Indian aesthetics and art-making: chhandomaya and ananda. Chhandomaya is the rhythm, balance, proportion and harmony that is the essence of all nature and life. Getting in touch with, or being in rhythm, balance, harmony and proportion is what the artist and viewer attempt through art…Ananda is transformative joy and bliss. In Indian philosophy the ultimate aim of consciousness is to enable the experience of ananda…Experiencing this inner joy was thought to be at the heart of the aesthetic experience."

Should healthcare architecture then move towards the expression of transformative joy (and bliss)? Surely all architecture should. Easier said than done, it takes Buddhist monks twenty years of meditative practice and there's no guarantee attached to that.

The Buddha says:

When a person finds fulfillment in kindness, compassion, and selfless service…sorrow cannot touch him at all. When sorrow is absent, what remains is our native state: intense abiding joy.

In the end, it wasn't about Indian art or healthcare architecture at all.

Demystifying Design: Anticipation Being Half the Solution

Design is not so much about solving problems as anticipating them.

A controversial statement for the design fraternity. Designers think of themselves as being talented problem-solvers. So what is this nonsense about anticipation being half the solution? It is nonsense…anticipation is almost the complete solution.

When you go about designing a building what would you think the priority activity would be? Obviously to pin down the plans/elevations/sections as fast as possible and take the money and run. Hang on a minute…not the case at all. The priority activity while designing a building is keep everything about it as fluid and "un-pinned down" as possible, give yourself as much elbow-room as you can to solve problems that could crop up later in the process. What I'm saying is at the beginning of the process you anticipate everything about it going wrong, not as you may think, right.

Pessimism and optimism are two sides of the same coin.

I think you're getting the point now. The funda is to anticipate and solve problems before they rear their ugly heads and leer down at you. In healthcare facility design (my specialty), this can be done in several ways:

- Establish a planning grid upfront; give yourself a hat-rack to hang your hat on, so to speak. This is done by laying out the standard accommodation first, namely the inpatient rooms. (See: my previous article "The Planning Grid").
- After establishing this basic framework, plan the major circulation paths. Spilt the planning grid to accommodate these "paths". From these paths you should be able to access all the structural bays you have set up with the help of the afore-mentioned planning grid (except in certain special conditions, which we will keep as a trade secret for the time being).
- Based on the design of the inpatient units you should have by now determined location of vertical elements such as elevator cores, staircases, service shafts and of course the bane of us architects' lives, the columns. Now project all these below the inpatient tower, till they hit the foundations.

Hey hang on another minute. What has this got to do with anticipating problems? Nothing, really. It has to do with a process that will solve half your problems without your even anticipating them. So to that extent it has to do with anticipating problems. Having got you back in a suitably confused frame of mind lets move on to some more clarity.

- Establish at this point your entrance points on the ground floor/basement, namely the main entrance to the hospital, the casualty entrance, the service entrance, the staff entrance, any other specialized department entrances (such as a Woman & Child Center). This will greatly ease your subsequent planning, and, like a bridge over troubled water, it will also ease your mind.

Hang on a third minute. All this, from the first bullet onwards, is tentative, and may need to be reworked at any time. Then what, you may well ask, problems have we anticipated, let alone solved? To that I answer, as a healthcare facility designer of some skill, did you really think you could design a healthcare facility in the same way you would cook a Thai curry, from a recipe book? It takes some experience both as a healthcare facility designer as well as a curry cook. Well, having said that, lets get back to the recipe…

- Two tspns of aji-no-moto (naaah…just kiddin').
- Well, things start getting a bit complicated from here onwards, separating the healthcare facility designers from the other merely mortal kind…this casual arrogance being a quality both kinds possess, not that that excuses me. Type "hussain varawalla" into Google search, read everything that floats to the surface and buckle down to the design of your healthcare facility. Have fun.

Hopefully you will discover that in anticipation lies half the pleasure.

Demystifying Design: A Journey of Exploration

Design can be a journey of exploration.

I quote Mark Knofler, lead singer and guitarist of the rock group Dire Straits, the title of the song being "Love over Gold":

"Yeah, you walk out on a high wire,
You're a dancer on ice…
Pay no heed to the danger, and less to advice…

…throw your love to all the strangers,
And caution to the wind.

Yeah, you go dancing through the doorways,
Just to see what you gonna find…
Leaving nothing to interfere with the crazy balance of your mind,
When you finally reappear at the place where you came in,

Thrown your love to all the strangers…
And caution to the wind.

It took love over gold,
It took mind over matter,
When you do what you do when you must…
When the things that you hold they can fall and be shattered,
And run through your fingers like dust.

The good designers and the great designers are on a journey in quest of love. The gold may or may not follow as a matter of course. I don't think they really care. They pay no heed to the dangers, and even less to advice.

It's about giving of yourself without any expectation of receiving anything in return. It's about throwing your love to all you meet, with caution, of course, then, being thrown to the wind.

Jim Morrison named his band the "Doors" because he wanted to open doors in peoples minds. Good/great designers dance through these doors they open in their minds, without any clue or even any expectation of what they will find. When they dance like this they leave nothing to interfere with the crazy balance of their minds. It's a little like being stoned on yourself.

And I think towards the end of their stay on this earth, they find they've come full circle and come home. They've done what they had to when they had to. An epitaph to envy.

On this journey of exploration there are many pitfalls. You're trying to hold on to your sanity with all your strength, but you cannot keep your fingers clenched in a fist because you can't, and then whatever you're holding on to will fall and shatter, running through your spread fingers like dust.

And in the end that's what it's about, isn't it? Ashes unto ashes, dust unto dust.

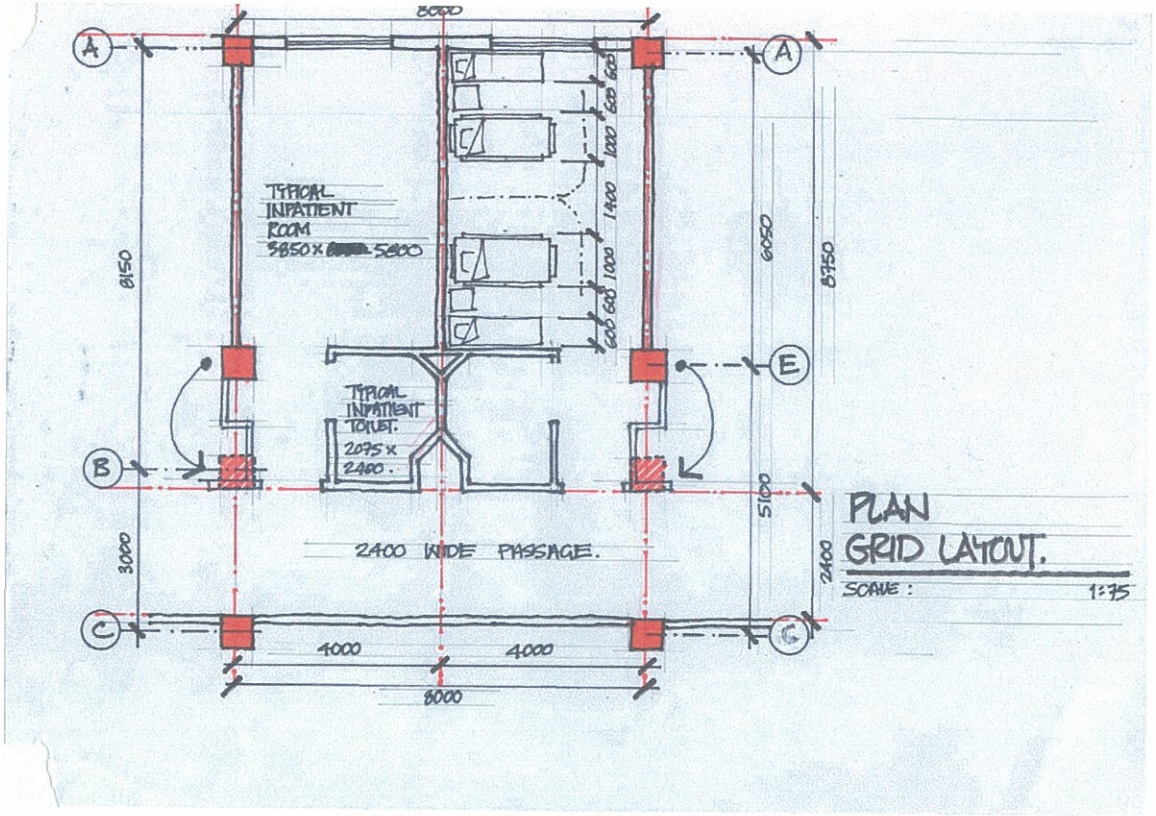
The writer is Director-Design Services at Hosmac India Private Limited and can be contacted at hussain.varawalla@hosmac.com

Determination of an Appropriate Grid Layout for a Healthcare Facility

Hussain Varawalla

This article addresses the important question of how to determine an appropriate grid layout for a healthcare facility. Nothing is as important as starting the design process right, and the determination of the planning grid (as opposed to the structural grid) is the best place to start.

Please take a moment to look hard at the part plan below (I apologize for it's sketchiness, but it's all I have at the moment)



You can immediately see that it is a plan of two rooms (modular double or single rooms) of a healthcare inpatient facility. This is how we start to determine the planning grid, by determining the standard structural bay which contains what I will in future refer to as two "room bays". It is advisable to keep the single rooms and double rooms the same size with the same toilet because of the following reasons:

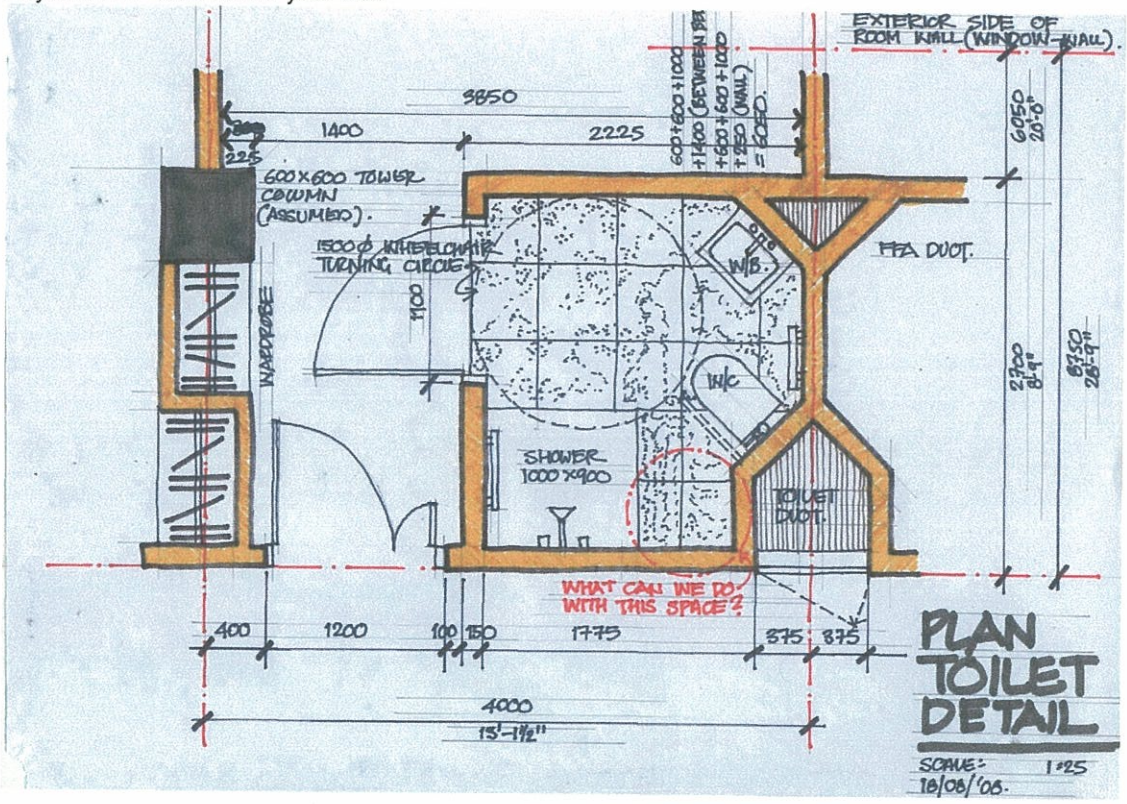
1. It allows for future flexibility in the single/ double room facility mix without any changes in the civil work. In the distant future (five years plus) this might come in very handy, as we cannot foresee the demand for different room types that far ahead.
2. It keeps the structural bay consistent. This comes in very handy while designing the structure as well as the MEP services. If your single room is smaller than your double room, it if difficult to stack them atop each other. If you have different types of rooms on the same floor it becomes difficult to attract the higher paying patients, as they do not like to mix with the proletariat. Unless your hospital is very large and has three wings per floor and the intention is to divide inpatient facilities according to medical specialties I would not advise mixing room types horizontally.
3. If you don't build the center wall such that the two toilets are at the sides of the larger room so created, you can accommodate a 4 to 6 bed ward in the same space. If you would like to design the toilets differently for these wards, you can try, I wish you luck.

The size of this room bay is therefore determined by the minimum dimensions needed for the double room. Typically we will be providing for one attendants bed per patient in double and single rooms, and recliners in the wards. The distance between the centerlines of the two patient beds should be 2400 mm as per international standards, so to cut a long story short you an see how we have determined the minimum depth of the room, up to the toilet wall. We will discuss the design of the toilet a bit later.

The width of the room is usually determined through toilet design and access requirements according to hospital policy (will the patient be wheeled out on his bed, or will s/he be wheeled out on a stretcher.) Increasing patients are being taken out on their beds, as moving to a stretcher is traumatic and to be avoided.

The next step is to determine the size of the passage. I suggest you just make it 2400 clear, which will suffice. Now we put one planning grid on the exterior face of the windows as it is from here that we will have to leave statutory open spaces. We put the other planning grid on the face of the interior passage, as nothing should intrude into this space other than the rail guards. Unless you are planning a singly loaded corridor, wonderful if the budget permits you, it usually doesn't, so we mirror the whole thing about the centerline of the passage. The other three planning grids are down the centers of the walls between the rooms.

There are probably more ways in which you can place the columns, I have shown two commonly used configurations. The advantage with placing the column at grid 'E' is that the spans become more equal and makes for more efficient structural design. The advantage of location 'B' is that the beam over the passage reduces in depth and you get more height to lay out you service runs neatly. Deciding between the two is not a structural decision, but an architectural one in consultation with the MEP consultant. IF you have a height of 4.2 M for the podium, and 3.00 M for the inpatient floor, I suggest you go with 'B'. Alternatively, if you have a height of 5.00 M and 3.60 M respectively, go with 'E'. Anywhere in between it's your call.



I hope all of you are still with me. Just a little bit more, I promise, and then you can go to the canteen for your cup of tea.

Designing the toilet competently is critical to this whole exercise. As I have mentioned above, it will determine the final location of grids on both axes. The design of the duct is important for maintenance. It should be accessible from the corridor, not from within the toilet. The toilet in the sketch is designed to accommodate a 1500 diameter wheelchair turning radius. It's only one way of doing it. I have seen dozens of different layouts, more so in books.

The question "What can we do with this space?" is aimed at my colleague not homework for you all. Treat it as rhetorical. The masonry opening for the door should be 1200 wide for a bed to come through. This then will finally give you the two numbers we have been so tediously trying to determine, a planning grid of 4000 x 8750. Anything larger than this is uncalled for. You can squeeze this to 3750 x 8500, but I would not advise doing it less than that.

Enough already. Time for the promised cup of tea. What this article tells you in fact is that the layout of the inpatient tower is critical to the design of the whole hospital, as staircases and vertical cores of elevators and service shafts will be determined by this. Further information on the subject can be gained from my article available on the web titled "The Planning Grid". Happy reading!

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