THOUGHTS

ACTIVIST

ON ASIAN

ARCHITECTURE

ARCHITECTURAL

TAY KHENG SOON

EDUCATION

ACTIVIST ARCHITECTURE

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Author's note

Architecture, unlike art, can never be a monologue.
No one can escape the dialectical experience of
a building, a district or a city.

Yet, in today's academy, under the twin influences of
postmodern subjectivism and academic scholasticism,
architecture has tended to become more of an
intellectualised artistic endeavour than a sociocultural
project in which dialogue with reality is necessary.

This collection of essays, expertly edited by Epigram,
captures the essence of my dissertations on architecture
and aesthetics, whose epistemologies are derived from
my reflections gained from actual practice and social
activism, and not from pure thought alone.

Academicism aside, architecture remains an intelligent
craft. My hope is therefore that this collection of essays
fills a narrowing gap and serves as an adjunct to what
teaching and learning for practical action should be.

Tay Kheng Soon
2021

A Declaration

I DECLARE WHAT I BELIEVE IN:

I BELIEVE THAT IF AN ARCHITECT HAS A COMPREHENSIVE OUTLOOK, THEY CAN BE AN EFFECTIVE AGENT OF CHANGE. TO DO THIS, THE ARCHITECT HAS TO BE SKILFUL AND ABLE TO EMPATHISE WITH PEOPLE AND NATURE.

SUCH ARCHITECTS WILL ALSO NEED TO UNDERSTAND CURRENT AFFAIRS AND THE NATURE OF THE CRISES, AND WANT TO DO THE RIGHT THING.

THEY MUST KNOW THE RELATIONSHIP BETWEEN QUANTITY AND QUALITY. THE MORPHOLOGY OF SPACE AND FORM IS BASIC, AND BEING ADEPT AT PRIMARY AESTHETICS IS AN ENLIGHTENMENT.

SUCH ARCHITECTS WILL BE ABLE TO DESIGN EVERYTHING IN AN ETHICAL, COGENT, COHERENT, CONSISTENT AND LIVELY MANNER, EVERY TIME, EVERYWHERE, WITH WHATEVER MEANS AT HAND.

The twenty-first century seems to be emerging as the Asia-Pacific century.

The West is in economic chaos. It is as though economic growth and development has shifted to the East, even though Asia's development model is still based on the Western industrial urbanist model—the cause of climate change and environmental degradation.

Asia's education model is still based on the old model, though its politics are much more authoritarian, as it is in China. This phenomenon will change, and with it, how Asia imagines its buildings and its human settlements.

Modern industrial culture emphasises the training of the left brain. Right-brain education is neglected. The human personality is asymmetrically skewed to one side. The old model's emphasis is mainly on logic, rationality, memory recall, discipline, mathematics and mechanistic science.

Changes to architectural education suggest a precursor to a more general educational change. Learning architecture is very different from the old model; it requires integrated reasoning, intuition and involvement of the senses—architecture is both a science and an art.

Unsurprisingly, students find it difficult and disconcerting. How are they to learn this new way of thinking, schooled as they are in left-brain thinking? Moreover, our architectural pedagogy has not been re-conceptualised to suit the new global Asian context; ours is still based on early to mid-twentieth-century Western teaching styles.

Our tutors plunge our students into "creative" exercises for all the best intentions. The result is not what they really expect—students mistakenly indulge in making strange forms and shapes, thus reinforcing the appetite for fancy which they think architecture to be.

Tutors also talk to students using imprecise and vague terms, trying not to "instruct" but to "inspire". Mastery of the descriptive language of aesthetics is inadequate. As a result, students are muddled even more so; a vagueness, which conceals the flaws in thinking and the sensing, persists throughout. This vagueness is mistaken for creativity.

Our pedagogy is not only unclear; the basic skills that need to be learnt are not identified, and the exercises are not pointed enough to learn specifically.

Skills such as the coordination of hand and eye as in freehand drawing are not systematically learnt because drawing is mistakenly seen as an art activity.

The eyes are not systematically trained to estimate distances, sizes and

proportions through specific exercises.

The kinship of forms is not recognised because it is not made conscious against the deluge of interpretation and metaphorical reading.

The dynamics of colour interaction is not consciously drawn to attention.

The properties of space and form are not consciously connected to words to become conscious categories that can be senses, which are then recognised in words.

Conscious processing of that which is sensed is thus poor. Connotation totally replaces cognition.

As such, design expectations, bereft of the supporting skills, do not match the aspirations. There is a general feeling of inadequacy, and a sort of inertia results. This feeling is diverted into extravagant rationalisation and fancy forms. The stage is set in the early years for a muddle through to the final year.

Design is an intensely self-actualising process. This is its energy. Integrating senses, intuitions and reasoning makes great demands on the psyche of the designer, but it is intensely joyful when everything comes together.

There are therefore three linked areas in design pedagogy: the mastery of technical knowledge and related thinking skills, the mastery of sensing skills, and integrating the reasoning and the intuitions of the student.

Through actualised learning, students will rely less on copying and imitating, although learning from examples is necessary. Precedent studies should be done for the information contained, and not sources for surreptitious appropriation.

With knowledge and the embodied mastery of necessary skills, the ego becomes confident, not touchy. Learning, discovering and creating become open and sincere. That is how it should be.

Integrating the personality is not psychiatry. It is a studio design tutoring technique that helps the student to be conscious of the inchoate intuitions and tangled rationalisations they find themselves in. Such a procedure is most enlightening, and that is what students really yearn for.

There are two driving forces among our students. First, there is the hunger for personal integration and involvement in reality so as to compensate for the secondhand lives they live.

Second, there is a deep resentment towards the overly-bureaucratised, sanitised and regulated lives they have had to conform to.

Students are not fully-conscious of these two forces. Instead, they work hard to fill the gap, consuming enticing bits of information. Once we recognise these two drivers and tailor our teaching styles to address them, the design education we provide will become deeply satisfying and energising for our students.

Real learning comes from overcoming cloying assumptions through comprehensive comprehension. This is our opportunity and our challenge as educators.

We must dare to rethink all our teaching and learning strategies. Asia is greatly in need of this new breed of Asian-thinking, designing and activist architects. This is the task of this book. Ⓐ

PHOTO BY HONEY YANIBEL MINAYA CRUZ ON UNSPLASH.

Learning architecture is very different from the old model; it requires integrated reasoning, intuition and involvement of the senses– architecture is both a science and an art.
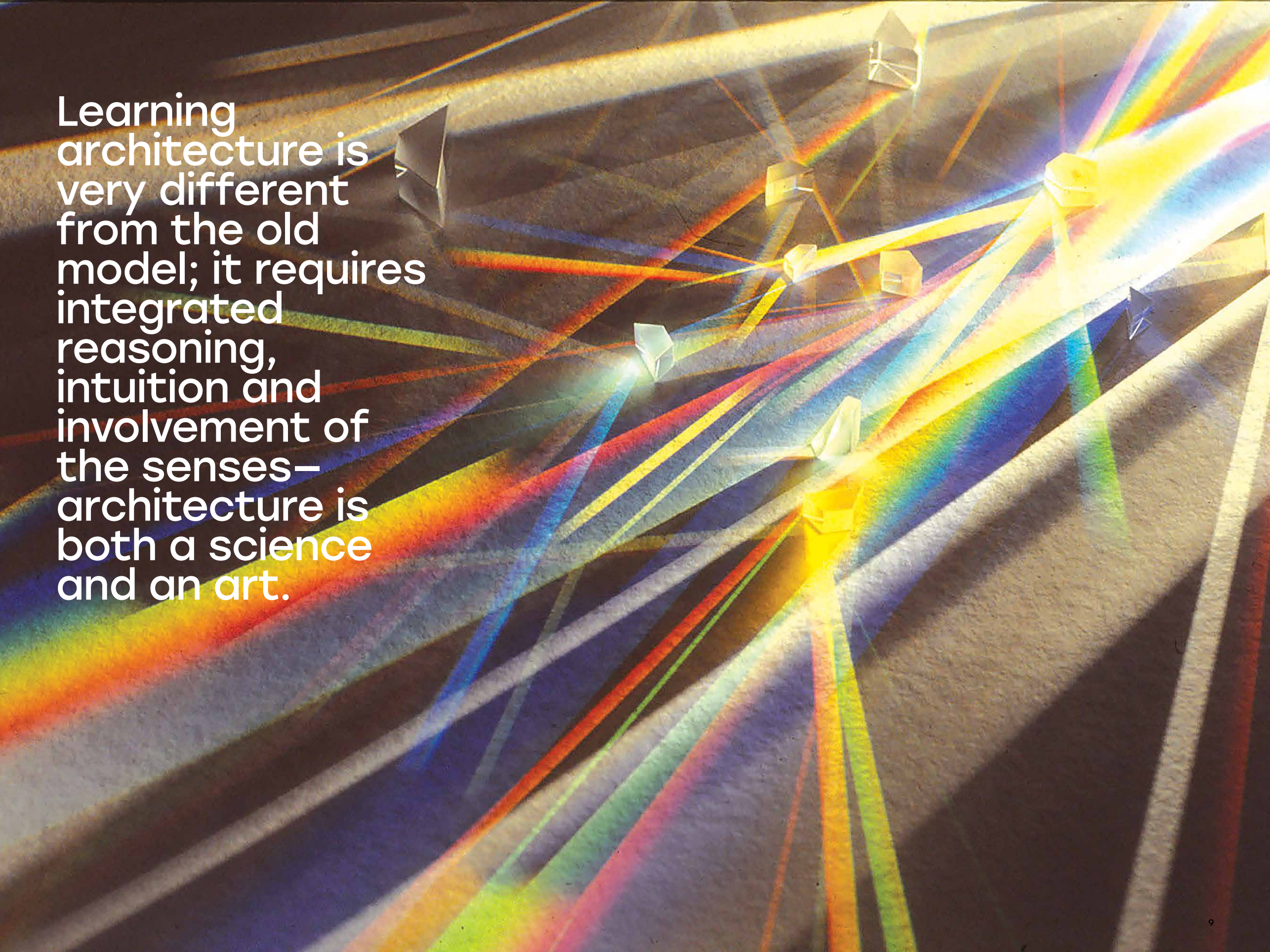
Where Do We Begin?

PHOTO BY SHUBHAM DHAGE ON UNSPLASH.

The following preface in the catalogue published by the National University of Singapore (NUS)'s Department of Architecture introduces the year-end exhibition held at the Asian Civilisations Museum. It is a valuable document of intention, process and results.

The exhibition showed the tremendous energy and diversity of outcomes. The process was intense and the intentions of the curriculum well and heartfelt. In some ways, it was the result of the many informal chats I had with Florian Benjamine Schaetz, the Year One coordinator at NUS, on the teaching and learning difficulties we experienced.

In some other ways, we also diverged, such as in the methods employed and the confusions inherent in the inevitable combining of art and science in design.

I will have dealt with many of the issues Florian raised below.

Where to begin in the first year of education for an architect?

"What we see in this exhibition is the summary of an intense twenty-six weeks over two semesters, a journey into self discovery and self study. It is much more work-in-progress than a finished outcome. The year is organised into two parts, with an objective to train observation, instil sensitivity and to question forms, patterns, textures and space, in the discipline of architecture. A series of iterative workshops in the first seven weeks was set up to inculcate consistency and coherence in building up the grammar of architecture. As a foundation, we start off with the exploration of lines and components, the duality of our own body and its relation to an urban context, the proportion of components to space that results in a form that derives from materiality. A well-trained perception leads to the sensitive creation of space and form. Intuitive and naive generation of space is not welcomed, but everything is allowed if there is a reason to it.

The next six weeks build up the understanding of structure, construction and its relation to materiality. The representation of ideas is shown through the conventions of plans, sections and elevations. The first semester gives a basic knowledge to technologies and tectonics and communicates that architecture does not work just as an art but also as a science. We introduced calculations, structural systems and the consequence of an architectural idea that develops from a large scale into 1:1 details. Each workshop was accompanied with architectural theoretical texts, films and essays to widen the perspective on philosophy, history and master architects.

In the second part of the year, we focus on scale, contextualism, history, urbanity and functionality as a real-life scenario. We juxtapose and explore design approaches in the natural environment, a dense rainforest as dense as a modern city. The "me" as a first character becomes the "others" as a second user that generates space and an architectonic idea. Film is introduced as a medium to read and discover a scenario, script, character in a city. The character of a film becomes the main protagonist or our spaces, where we give our space a narrative. Form is driven by functionality, whereby the given context has to be analysed and understood. Within the traditional idea of 'genius loci', careful ideas evolved out of the site, which can only stand at a specific site and cater to a specific unique user.

Space has to be explored in models, not in description of words. Therefore, during the year, our focus is on building models as an abstract representation and experience of space. The model proves in scale the functionality of a design idea. During the design process, it shows materiality and it defines circulation. Through the regime of working with the physical qualities of the model, the design idea becomes real.

Human knowledge increases daily. It even doubles every ten years. The choice to enter into a profession of being an architect is a great challenge, huge responsibility and an amazing opportunity. During the act of creation, positive or negative contributions affect our environment. Besides balancing the activation of the left and the right parts of the brain, the process of creation also challenges our perception of space, trains our curiosity and also increases the understanding of material and craft."

—Florian Benjamine Schaetz, April 2011.

My only comment at this stage is the following: it is one thing to stimulate students, but the method is important. We must understand that all students are exposed to the design culture that emphasises stylistic difference. They therefore interpret all well-intended exercises as opportunities to create difference by every means.

Real learning of design principles has to guard against this. Design exercises must deliberately strip away stylistic potentials and focus on direct and focused responses in order to raise consciousness of basic spatial and formal properties.

This requires clarity and purposefulness on the part of tutors, who need to be trained to achieve this. A good designer is not necessarily

a good tutor. Mature tutors who understand pedagogy are needed. Young and enthusiastic tutors with favourite personal hobby horses can do unintended damage.

This book is thus dedicated to all those who are interested in knowing about architecture, and especially to those intrepid spirits who want to learn design to make a new world, and those wanting to learn how to teach it in this historic time in Asia.

This book specifically focuses on learning architecture in rapidly developing parts of Asia; it has to be different from learning architecture in developed countries. Different attitudes and skills are needed to effect change.
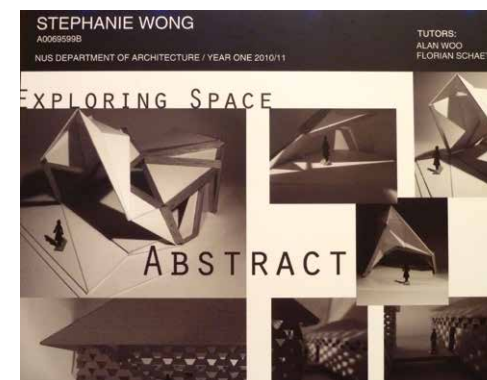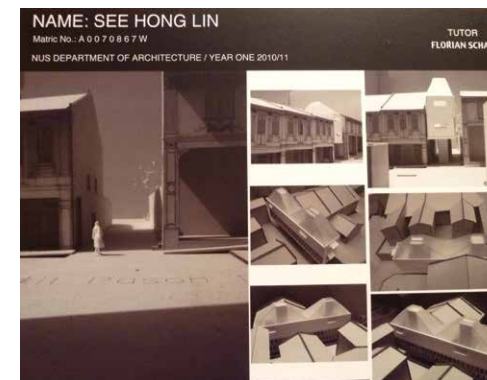
This change has to take place in our Asian schools. Asia has to define a better route to the future despite the stresses of rapid development, lack of aesthetic confidence, out-of-date learning styles and excessive reliance on the Western development models. We are all in the birth pangs of a brave new world.

In Asia's new development model, architecture has the important role of visualising the future; what kind of architecture and human settlement designs will achieve social, cultural and environmental justice?

What directions should Asia take in educating its future architects, decision-makers and developers to achieve this, and to resist the seduction of the defunct architectures from developed countries?

What are the learning dimensions Asian students have to immerse themselves in to learn new architecture that is not artistically and thematically self-absorbed, nor socially and environmentally ignorant—yet achieve ethical and aesthetically coherent, consistent and lively design responses?

How should this agenda be addressed?

New thinking on so many fronts—including architecture, environmental sustainability and settlement planning—has to be geminated here in Asia. We in architecture schools have to have clear purpose and method to turn our tremendously diligent students into innovators of the new age-in-waiting.

We have the wealth available and the resources to break through. Asian architecture schools must dare to play their part as pioneers of new thought and new design. Ⓐ

The Asian Renaissance

PHOTO BY LUCA SANTOS ON UNSPLASH.

Asian Renaissance, for it to begin in earnest, means revisiting our deep Asian intellectual and philosophical heritage, confusing and contradictorily as these might be. Facets that are still relevant today should be extracted.

We need to educate ourselves on new situations and the challenges of new Asia. We must then educate our next generations of thinker-doer architects to be daring and to be able to demonstrate viable economical, purposeful and aesthetically attractive alternatives.

The Crisis of Our Times

Only China has escaped the clutches of global imperialism dictated by Euro-American neo-liberal globalisation. There has been growth and transformation, but the rich have gotten richer, while the rest are not rich enough.

Lawrence Summers, the American economist and former US secretary of the Treasury, describes the global economic situation as a "secular stagnation", where trillions of dollars lie idle.

This is caused by two things: the crisis of demand, where unlike in the past, people are too poor to purchase products of Western industry, leading to a lack of incentive to invest in production; then, ageing populations in developed countries exacerbate this problem—older people spend less.

Idle money goes into real estate, shares speculation and offshore accounts to the tune of tens of trillions. Architects unwittingly contribute to the real estate speculation.

Architects are caught in the vice created by the regulatory framework and commercial demands of the client-developer. The city is the stomping ground of regulators and developers writ large, and architects are powerless in this game. Our talent in visualising and concretising has to be put to better use— for social and environmental purposes.

Buildings and cities are energy guzzlers. They are part of the atmospheric pollution and degradation of the natural environment. It ushers in the global environmental crisis, over and above the structural economic crisis.

There is a crisis in thinking that underpins all these crises. It is a crisis of thought itself, and therefore in architectural thinking as well.

Postmodernism feeds subjectivism, which architects like very much. It fuels fantasising. This stems from the post-structuralists, an off-shoot of postmodernism's disappointed Marxists critique of structure as being too confining. This is wrong, and I address this in my 9 square matrix of reality.[1]

Understanding and Mastering the Epistemology of Aesthetics

Once designers master primary aesthetic principles, they can design anything coherently and expressively. Aesthetic mastery is crucial to a designer who attempts designs for unprecedented agendas. It is what gives coherence, consistency and dynamics to cogent ideas, forms and spaces, and is thus free to be true, uncontaminated by the dictates of style, fashion and ideological formula.

In the post-West and postcolonial context, this is most important for the rise of a new Asian consciousness. Too many in Asia mistake the West as best, and that the monochromatic, crisp modern industrialist architecture from the West—including its perversions and contortions—represent progress itself. We need to integrate colour and craft into urban and rural architecture. This is addressed in Chapter two.

[1] See Chapter 10

New Asian Thinking

Westernism is deeply infused in cultures everywhere—including in our design culture. Apart from politics and aesthetics, the essence of our Asian-ness has to be rediscovered in our contemplative traditions and philosophies.

Rethinking these and bringing these into our time is important to free ourselves from subconscious indoctrination. Racism is also at play, and we are not immune to it either. Design can be a levering factor towards such a needed liberation.

It is urgent that we have to think universally—it is not always us versus them. But we must know ourselves first. Our identity has to be on a more substantive basis after so much propagandising and Western-style development. We must think and act in an enlightening way.

Philosophy, the bedrock of thinking, is important. In the Chinese tradition, reality consists of three elements: Heaven, Earth and Man, unlike the Western binary system of Heaven and Hell, good and bad, right and wrong; and etc.

The Chinese way is minimally trilectical: three, not two—not dialectical. Marx applied Hegelian dialectics but succumbed to its dualism, expressed in the dynamics within capitalism and socialism. This has profound implications for thought and action in our time as well as in design thinking.

Democracy, as promoted by the West, is but a cloak to make the world safe for rapacious capitalism. In the ancient Eastern tradition, there is evil in good and good in evil; therefore, moderation and circumspection are advised.

Modernisation is the process by which liberal market capitalism and the invisible hand of the market independently moderate greed. It evolved into the current form of corporate capitalism dedicated to shareholder benefit at the expense of its stakeholders, be they employees, society at large or the environment as a whole. New design thinking—one that takes a stakeholder attitude—needs to be formulated.

The 9 square matrix models the dynamic movement of the double trilectics. Every part of the matrix concurrently acts on every other part. There are no simplistic solutions. Time, technology, ideas and values are in constant movement.

As the result, there is no permanent dichotomy between nature, urban and rural, or between the architecture of standalone buildings and the architecture of life.

Architecture as an art object is repugnant in this sense. Architecture needs to be changeable. It is an aberration for architecture to be a stationary art object.

New Architecture in the AI Age

AI is inevitable. We transition to it because it uses resources efficiently. The outcome is ageing societies with low total fertility rates in developed countries.

Capitalism, ironically, has to create effective demand. This means increasing the income for everyone, as well as reducing the cost of living.

Architecture and urban design must take into consideration how to reduce building costs and therefore rent, and to create humanised jobs in the process. The future economy is going to have to be demand-led, and not production and falsely induced consumption-led through the defunct debt-based financial system.

Venture capitalist and computer scientist Lee Kai Fu, in addressing the humanised work-world necessitated by AI, says that we will need to create jobs for 10 times the number of well-paid teachers and healthcare workers. I will add that we need well-paid architects and community-related design facilitators based on AI-manufactured building structures with intricate handcrafted infills made by well-paid crafts-people. We have to imagine this new kind of architecture. Architecture as singular art-object should be an oddity in an enlightened new world order.

Humans need satisfying work for happiness, identity and a sense of self-worth and pride in the community. A new kind of "village" culture needs to come about in new Asia—one that has a spatial design approach.

We will need 3D digital planning methodology to achieve network-urbanism integration. A network economy powered by a mix of energy systems—nuclear, hydrogen and renewables—needs to be integrated within urban areas and within building clusters to power close-loop systems, using bamboo to replace timber, plastics; and etc.

Rubanisation comes into play.

WE MUST UNDERSTAND DYNAMICALLY HOW THE WORLD ACTUALLY WORKS. WE NEED TO BE MULTIDISCIPLINARY SO AS TO WORK WITH OTHERS IN ALL FIELDS ACROSS SOCIAL CLASSES TO MAKE NEW ASIA THE LEADER AGAINST THE DECADENT AND BANKRUPT IDEOLOGIES OF WESTERN NEO-LIBERAL CAPITALISM'S MILITARY, INDUSTRIAL, MEDIA, FINANCIAL AND ARCHITECTURAL FASHIONS. Ⓐ

This Book Is a Product of Direct Experience

It is a distillation of over five decades of practicing architecture in Singapore and in the Southeast Asian region, and over three decades of teaching and tutoring generations of architecture students at the National University of Singapore.

My teaching experience includes stints at the Massachusetts Institute of Technology; University of California, Santa Cruz; University of Hong Kong; the Chinese University of Hong Kong; and Universiti Teknologi Malaysia in Johor, Malaysia.

In this account, I reflect on the changing times as to how it affected changing tastes and fashions in architecture and in architectural education.

I also reflect on the nature of our students and tutors—how they are also products of the system they live in, and how it affects their thinking and aesthetic preferences. No rethink can ignore the nature of the people involved. Ⓐ

PHOTO BY ROSARIO JANZA ON UNSPLASH.

PHOTO BY RUDI ENDRESEN ON UNSPLASH.

We Must Dare to Think Afresh

how we can liberate ourselves from the domination of old ideas often portrayed as new ideas—many coming from the West in the form of the deluge of fashions and styles.

Development in Asia must mean going beyond catching up not only in styles, but in terms of technology and new concepts of social and environmental justice expressed in new architecture. While there are things to catch up on, there are new things to invent.

Hopefully with the rising self-confidence emerging in Asia, the time is ripe to start the rethinking process. This is the reason for me to write such a book at this time. We have to ask the big question: **Where is Asia going?** If it goes the American way, it will be disastrous. Ⓐ
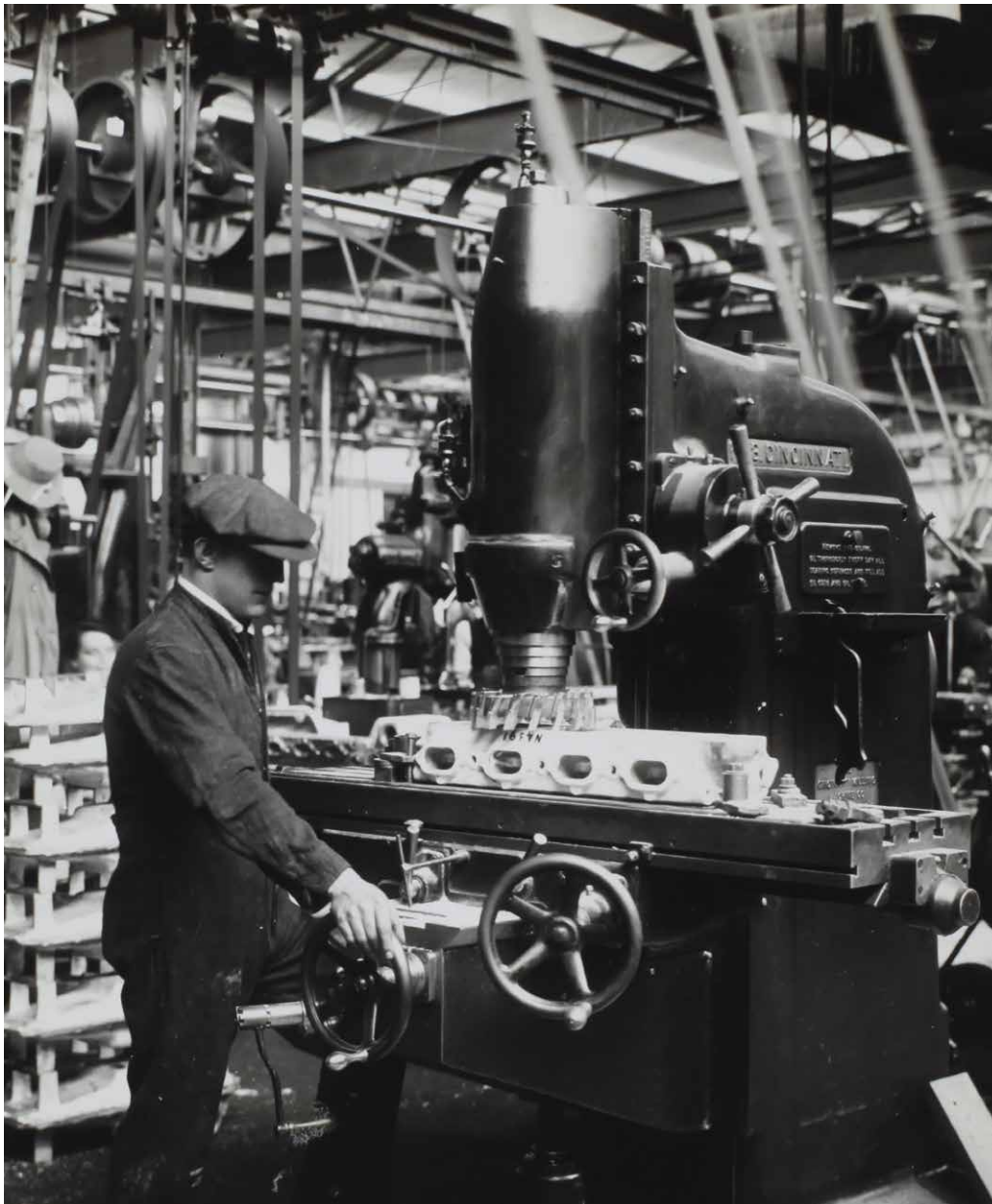
The Confusion of Our Times

D. Napier & Son Ltd, 'Aero Engine in the Making', England, circa 1918.

PHOTO BY MUSEUMS VICTORIA ON UNSPLASH.

We live in an in-between time—a time of deep change, yet with many lingering issues that hold back new thinking. And we are all cut up and feel powerless.

Just as when the Industrial Revolution changed everything and a new way of life had to evolve, we are now faced with the prospects of a democratised "environmental age" that forbids change in everything—including ourselves.

When the Western world entered the Industrial Age, it seemed clear that progress meant urbanisation— mechanised production and mass consumption. People had to be disciplined to suit the needs of industry and governance.

Schools trained people that way. The architecture of that early period lagged behind the momentous changes. The architects who clung to the old styles became obsolete. The mismatch was soon resolved with the invention of modern industrial architecture à la the Bauhaus.

Meanwhile, the welfare state was invented to stem the tide of social unrest in Europe and the US against the provocations of the Communist Manifesto. And so, social democracy had to be invented to provide a social safety net.

Thus was born the current notion of "progress", where the creation of the middle-class lifestyle and social imagination and ideology was entrenched in the universities and among professional classes in the West, and then exported everywhere.

The safety net is now bankrupting the European states. As it began to be withdrawn under the tutelage of neoliberalism, the pension fund debacle

resulted in the rise of home ownership. And with it, the bubble was born. The subprime mortgage crisis spun out of control.

A new model of development is now called for.

Meanwhile, Asia substituted the costs of social democracy by the state by fostering home ownership sponsored by the state. For want of a better term, instead of social democracy and the implied social safety net provision, systematic authoritarian rule, with the exception of Japan and India, evolved.

I use the term "systematic" to indicate a "rule by rules" rather than a "rule by the whim of the powerful". With or without elections, little difference is made, so long as social benefits became available and economic growth was achieved. And so, China, Vietnam, Taiwan, Singapore and South Korea got organised early, raised educational levels, accumulated capital and expertise formation in state-sponsored corporations and institutions, incentivised direct foreign investments, and built the institutions of the state as the backbone of the nation.

All the time, real estate value was inflated as the means for the state to tax and raise capital to fund its functions, and to feed the growing appetite of its citizens for private home ownership, both as a privatised investment for profit and savings for old age.

This real estate enterprise boomed all over Asia. Thinking about the full implications of this phenomenon, it must be linked to real estate's contribution to inflationary pressures as rents and mortgages rise.

Architects have to think what are

the alternatives beyond revelling in the prospect for more condominium jobs to exercise design fantasies.

All this peaked in the late twentieth century, with the advent of postmodernism's critique of the system and its corrupting aspects. Postmodernism also arose from the deep disillusionment with the failure of the Marxian Revolution that did not happen. Explanations as to why broadened the discourse into culture and psychology.

Postmodernism—PoMo—ushered in a period of confusion among architects, as they mistakenly thought that PoMo was a chance for new style! Celebrating fragmentation, multiple coding, using design as provocation all became fashionable, but no progress was actually made in imagining a new future. It was just reactionary.

PoMo was against any kind of metanarrative. It thus became an anti-intellectual philosophy, justifying hyper-individualism among those less inclined to deep political analysis.

Design consciousness turned inwards with the failure of thinking. As dreams of social change through design faded, designers began to indulge in private conversations.

The trivial became important. Confusion set in. An infinity of privatised micro worlds opened up. Nuances overtook theoretical penetration. Progress itself was eschewed. The fragmented self became evermore fractured into ever smaller parts. Fragmentation became the alibi for withdrawal from intellectual audacity; design became fetish.

As the West turned inwards,

architecture schools in Asia soaked up all these trends while having to face the challenge of rapid economic growth and urbanisation.

The developmental imperatives focused on cities, big buildings, the demolition of old quarters which placed demand on mass housing, middle-class condos, urban expansion, mega structures, super malls, mighty sports complexes, iconic towers; and etc.

It attracted no new theory of development among architects and planners. It was business as usual, and it brought in hefty professional fees and inflated egos.

But there is another parallel trend. Catching up with the West also meant emulating what goes on in their top architecture schools, where there is

OPEN FORM VERSUS CLOSE FORM

Refined architecture must necessarily be small. Big architecture is a reflection of big capital, big government and big design firms.

The challenges of today are the challenges posed by:

• The combined crises around financial capitalism's virtual economy;
• Monopolistic corporations romping all over the world, squeezing out small communities and small businesses;
• Climate change induced by the overconsumption of a fossil fuel-based growth economy; and
• The failure of the

a tendency for provocative designs, metaphorical explorations and privatised narrative designs.

These result in compelling images which, seen in the context of Asian schools, whip up an appetite to do likewise. The vitality of the privatised self is a tantalising image of the "free" self; it stands in sharp contrast to the staid pragmatism of the present.

And so, while the West has exhausted its developmental trajectory, it turns inward in its artistic endeavours. In the emerging economies, the arts and architecture are lost between practical demands and fervid dreams.

Discovering new grounds for authentic action is the challenge. This is because there is no vision of progress that can chart authentic

countrysides, causing massive in-migration into slum colonies around all third-world cities.

A new development paradigm is needed that promises social justice, cultural justice and environmental justice. Obviously, such a paradigm shift is of huge proportions and it has to be firstly led by new thought, then followed by doable steps leading incrementally to the necessary change.

Designers cannot any longer be ignorant of negative market forces, their scale and their entanglement with big government in the shaping of human space—both in the mind and in the natural environment.

Architecturally, the

directions beyond hitching up to the old developmental paradigm pioneered by the West.

And so, in our architecture schools, there is confusion. Aesthetics, design and environmental considerations have to somehow coalesce without compelling vision. Our tutors and students are torn between being "practical" and being "poetic", yet measuring up to the standards of the top schools of the West.

We in Asia need the freed spirit, tough intellect and confidence, which can only result from the deep understanding of ourselves within a new challenge from a new developmental paradigm. Only that can produce the energy that goes beyond critiquing, and the daring to formulate really new approaches. We need a new vision and we need a new toolkit. Ⓐ

really radical thing in design is to invent new aesthetics, technology and morphology which are capable of incremental implementation, adaptable spaces, and new spaces that can be added and subtracted in an economical manner to answer the need for participation.

This is what I call open form. All traditional and modern industrialist forms are closed forms, however coherent and alluringly complex they may pretend to be.

The challenge is even more daunting, given that the social agreement on aesthetics is absent or in the process of formation. And so in such a situation, the open form can easily degenerate

into a collective mess that does not display any coherent or consistent character.

The challenge therefore lies in how to make it a coherent and consistent form, despite the multiplicity of ad hoc interventions. How is one to invent a technology and an aesthetic language that can cohere?

In as much as Bauhaus and modern art faced the daunting challenge of creating order out of cold machine elements, the art and architecture of tomorrow has to grapple with making order out of chaotic multiplicity. Architectural practice is hamstrung by market forces. Who then can provide innovation leadership, but architecture schools? Ⓐ

This Is Why I Have to Write this Book this Way

Given the tremendous pressure in reshaping the entire landscape of development and the huge gaps between theory, teaching, practice and new challenges, I feel compelled to organise my thoughts—especially on teaching and learning architecture. My approach is reflective. It is based on what I have experienced, observed and thought through.

Practice is the backdrop upon which teaching is positioned one way or another. There is therefore a studio design culture that reacts to and critiques the current situation, and this affects design output and attitudes in schools—and ultimately in practice. Teaching and practice are two sides of the same coin. I experience both.

The prevalent attitude is to be as different as possible. Yet, the differences tend to be the same. Why this is so, is a question that perplexes me; I have sought over the years to find the answer—or answers—that may explain this paradox.

The search brought me into a widening circle of explanations. This book attempts to show the complexity of the journey of discovery, and ends with a series of recommendations as to how to teach and how to learn architecture.

To teach is one thing. To learn is another. Learning, I have learnt, is more complex than pedagogy. Learning involves the personal psychology of the learner. Indeed, teaching also involves the personal psychology of the tutor.

Before we embark on an explication of how one should conduct architectural education, we need to understand how it got here, and what its internal dynamics are. The nature of the tutors and the nature of the students, what they aspire to, what mindsets they bring to the studio and what they do in the time they are in architecture school, are all factors that have to be considered.

At the end of this book, I will integrate all these factors and prescribe what needs to be done. I am well aware of the tendency of not prescribing, and I am well aware of the reticence to do so, given many past disappointments. I however feel that not to draw lessons from reality and to propose what needs to be done is also a dereliction of duty. Indeed, a convenient cop out!

My aim is that through this book, the reader can learn to be a knowledgeable and capable architectural designer by themselves. I have to go deep into the way our brains and bodies work. The exercises prescribed in this book are the basic skills that are needed. Ⓐ
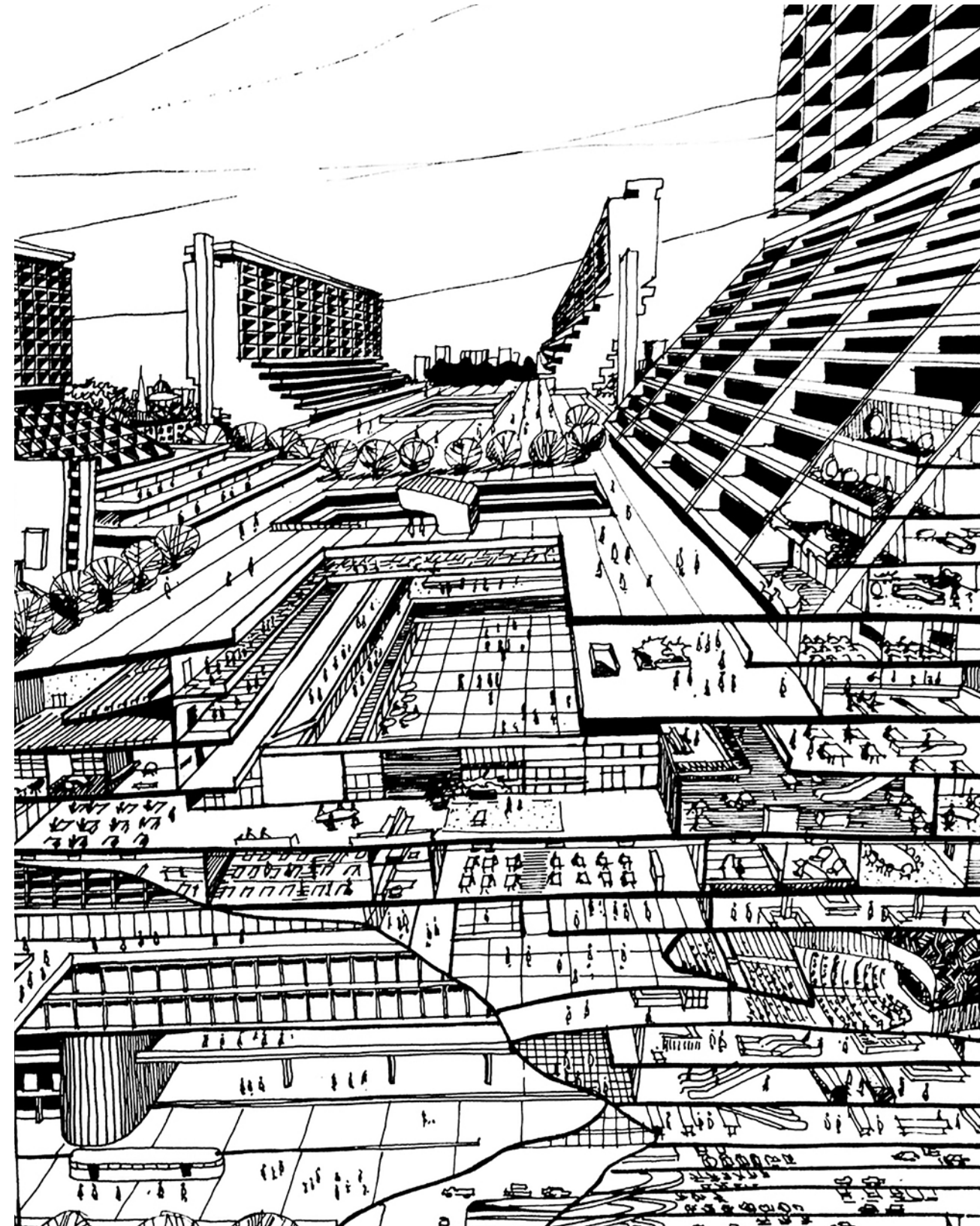
WHAT IS DESIGN?

Design is practically, ethically and aesthetically actualised intention.

Architectural design today has to answer and respond to present challenges: the great issues of the emerging situation, and the social, cultural and environmental injustices that prevail. The intellectual and ethical basis of design has to extend beyond individual subjectivism.

Design is thus an intellectual as well as a sensing process driven by both reason and intuitive basic impulses. It must be aimed at bettering life in every circumstance while achieving short and long-term human needs within an intense awareness of eco-ethics.

Every design has to be circumspect. To regard architecture as an independent art object is obsolete. It is even pernicious.

In this day and age, architectural design has to go beyond satisfying human needs; it has to include responsibility towards all living things. Architectural space has to consider everything as one integrated and interconnected system.

The architect has to therefore be a comprehensivist as never before, even as they specialise in form and space-making; otherwise, the architect's role is subordinated to the dictates of appetites driven by market forces and self-serving ego.

New design education has to immerse students in the social sciences and the natural environment to acquire the spatial and formal skills. Students have to be taught to appropriately apply all the autonomous properties of form, yet know the cultural and ideological aspects of human reality while making aesthetic and thematic choices in design.

How should architecture education be conducted? What are the appropriate pedagogies? How should educators handle the deficiencies inherited from the old industrial culture and from the habits of previous schooling? These are critical educational issues we have to deal with.

THE VALUE OF SHORT DESIGN EXERCISES

Design education in the studio is the accepted method of learning architecture. There used to be many short sketch design exercises and a few long ones in a year. Students hated the short design exercises, and many schools abandoned the practice. It was a great mistake—the value was not understood.

Long design projects lasting twelve weeks or more has become the norm. The value of this is a more thorough consideration, allowing time to integrate more of the design factors.

Short one-day design exercises serve a different purpose. The purpose is to develop intuitive intelligence. It is very stressful because students not only have to work fast; they have to draw from their intuitions and their innate resources. They have been socialised to use predominantly left-brain functions while their right brains—their intuitive brains—have lain dormant. As such, they are loath to reach into it.

This is precisely why short design exercises are valuable—students have to learn to trust their intuitions and their primal intelligences. As these are exercised, students will be more comfortable and better able to integrate intuitions with the rational. Ⓐ

Every design has to be circumspect. To regard architecture as an independent art object is obsolete. It is even pernicious.

PHOTO BY DREW BEAMER ON UNSPLASH.

The Education

We cannot turn back the clock. Architecture schools in Asia receive students socialised by their families, communities and schools. At university, we receive students who scored sufficiently high in their school exams. All design tutors are very aware of this and try their best to make up for the deficiencies as they perceive them to be. They try to compensate rote learning by stressing on creative and interpretative responses.

Most students, whether Singaporean or Asian, come to university with discernible characteristics. They are not very curious because they lack the courage to inquire outside of their comfort zones. They want authoritative answers. They want to know what the "right" answers are. They are uncomfortable with discursive inquiry while suspending judgement.

Yet, students want to express themselves, seek meaning and exercise subjectivity. In Asian culture, there is greater emphasis on meaning and purpose; little attention is paid to the autonomous properties of things.

Students come to architecture inspired by the designs they have seen in glossy magazines. They want to be just as "creative". In the early years of architecture courses, tutors try very hard to meet this expectation while trying to teach basic skills such as the inherent properties of aesthetics, structure, functional analysis, analytical seeing, freehand drawing, knowledge of materials, understanding of urban space, doing measured drawings; and etc.

This is difficult because these sorts of skilling smacks of the sort of drilling those students have undergone and now resent. Tutors know this and try to incorporate "creative" aspects into the necessary drills they must get across. Many young tutors are themselves imbued with the idea of teaching creativity. The result is confusion and poor grounding.

The ambient design culture students are exposed to through the media has also raised their own expectations about design. They believe that design is an exercise in the personal artistic freedom of imagination. Students therefore abhor disciplining and skilling, and many tutors unfortunately share this attitude. This phenomenon is compounded by the usual assigning of young tutors to the lower years, when the most experienced educators should be.

What I report is intended to show the extent of the learning problems schools of architecture at university levels inherit from their feeder schools. We need to better understand the nature of the learning legacy we inherit if we are to take corrective measures.

What are these corrective measures? Certainly, confidence-building is necessary through a programme of deliberate actualised learning—of acquiring seeing, drawing, construction, decision-making, inquiring, critical, analytical, language and sensing skills.

I emphasise "skills" because it is the foundation for the creativity we hope

Kids Klub! 26/9/15 Tay Kheng Soon

tree house for kids
27/9/15 Tay Kheng Soon
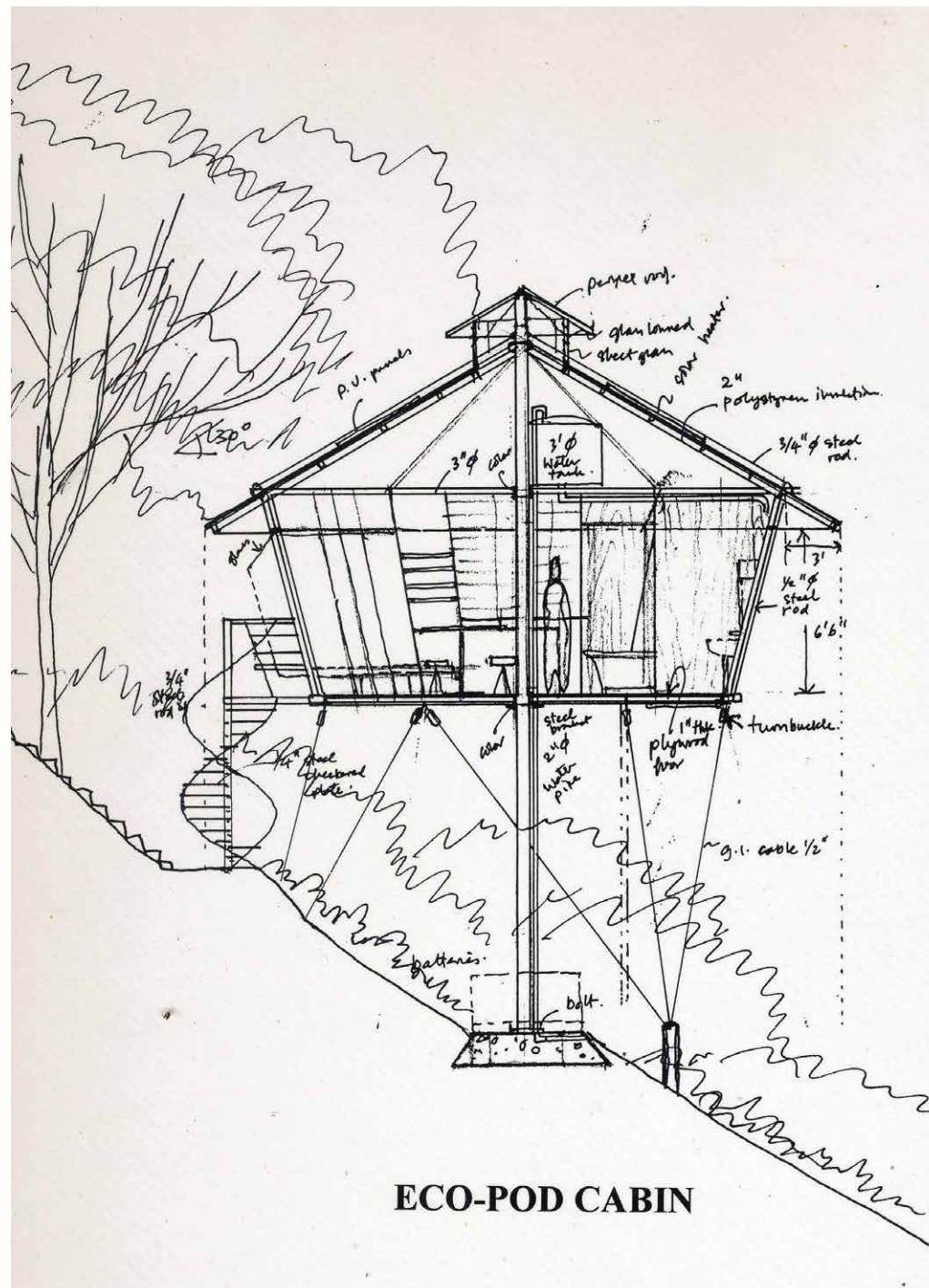
ECO-POD CABIN

to kindle. Paradoxically, when we emphasise creativity without rebuilding real skills, we risk building up false confidence and false creativity. We must avoid this by emphasising the learning of the basics.

There are many different understandings about what these "basics" are. My take on this is based on my decades-long experience in dealing with young architects and in tutoring students. I see a pattern in the lack of grounding in the basics.

I will briefly identify and summarise the basics that are weak and sometimes missing. These will be elaborated on in later sections of the book.

Thinking Skills

Technological requirements, economic efficiency, functional analysis, needs analysis, history of art and architecture—all these are attainable through logical reasoning and systematic exposure to such knowledge.

What is missing is a broadening of the scope of thinking linking the different domains of knowledge. The social sciences and the history of civilisations have to be linked, ethical issues discussed, philosophical positions understood, human condition perceived. The experiential universe of our tutors and students have to be tremendously enlarged.

Sensing Skills

Because design thinking in architecture is a combination and integration of reasoning and sensing, words are very important. Reasoning skills depend on the accurate use of terms and words. The chapter on words clarifies many of

the word categories often used.

Relating word categories to sense categories is especially important in recognising the cognitions that are sensed. When that which is cognised is recognised, the rational mind connects reason with sense. Integrated knowledge occurs. This is critical in design learning.

Information Skills

Given the availability of information and communications technology (ICT), tutors and students should use the internet and social media to expand their scope of inquiry well beyond their limited universe of discourse. They will be able to juxtapose seemingly disparate information and form learned responses as the basis for further investigation and validation.

Seeing Skills

The new generations of middle-class students have grown up in the modern urban world of conveniences. Their life experiences have very much been shaped by the impact of prepared information, often in 2D format—e.g. videos, TV, computers, print material; and etc. Their lives are limited by the demands of schooling, and relieved by entertainment media. Their bodily involvement in physical experiential space is limited.

This reality has to be truly understood and taken into design learning pedagogy. Deliberate seeing exercises have to be conducted and student attention drawn to judging sizes, distances, textures, colours, movements, proportions and the formal properties of objects and spaces. These are essential knowledges when they design.

Acknowledgements

Firstly I must thank Edmund Wee of Epigram, who believed that this selection of my writings, expertly edited by Julia Tan and Denise Fletcher, should be published for those interested in architectural education and philosophy in tropical Asia.

As a social activist, educator and practicing architect, I must thank my students, who inspire me, and also my critics, who forced me to refine my thinking.

I must especially thank former dean, Prof. Heng Chye Kiang, for his courage in appointing me as adjunct professor despite the climate of antipathy towards me. I thank Prof. Wong Yunn Chii, former head of department, for his encouragement and the years of wise banter we enjoyed together.

Finally, I must thank my Singapore partners in Akitek Tenggara, Chung Meng Ker and Patrick Chia, who sustained the office while I was engaged in my peregrinations.

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Tay Kheng Soon is a practicing architect and adjunct professor at the National University of Singapore. He was a founding member of the Singapore Planning and Urban Research Group (SPUR) and was its chairman in 1968. He pioneered many new planning and developmental concepts, which challenged and contributed to Singapore's development over the years. He writes and gives public lectures, and is considered a public intellectual who freely expresses radical and critical views in a highly conservative environment.

He is currently undertaking fundamental planning and architecture design research, which includes rubanisation (rural urbanisation) and the concept of modular cities.

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Reimagining Architecture and Architectural Studies from an Asian Perspective.

Architect Tay Kheng Soon, is known for his out-of-the-box architectural designs—think iconic, multifunctional brutalist buildings such as the People's Park Complex and Golden Mile Complex. He seeks to implement Asian philosophy and local design elements for the enhancement of spatial planning, urban development and buildings. In this book, he rethinks architecture and architectural studies—from design, education and aesthetics to going beyond architecture as an art objective—from a uniquely Asian approach.