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The Why Factory

We Want World Wonders

Building Architectural Myths

**With this book, The Why Factory
dares to wonder.**

**At the beginning of the twenty-first
century, most celebrated examples of
architecture are unavoidably spectacular.
Unimaginable cantilevers, rotating towers,
gigantic cupolas and exuberant shapes are
features without which the contemporary
building will hardly be registered in the
skyline or the media. Unequivocally, the
buildings getting attention are the iconic
ones. Never before has architecture tried so
hard to amaze. But are these icons true
celebrations of human achievements?
Taking a critical stance towards the global
production of the spectacular, The Why
Factory investigates the future of
amazement in architecture. What
constitutes a 'world wonder' today? How
can we provoke wonder and what can we
wonder about, now that almost nothing
is impossible in architecture?
This book contemplates the wonders of the
ancient and modern world, and innocently
explores new questions and
their fantastications.**

We Want World Wonders by The Why Factory:
Winy Maas and Tihamér Salij

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Is There a Desire for World Wonders?

Tihamér Salij

Lists of World Wonders

Man-made world wonders have marked our past civilizations and continue to dominate and fascinate us. From the Great Pyramid of Giza to the Colosseum in Rome, from the Great Wall of China to the Eiffel Tower – man-made world wonders have been driven by individual dreams and desires, beauty, myth, universal values and, of course, the politics, philosophy, economy and technological limitations of their time. All embody a fascination with the exceptional, the beautiful, and especially with the inexplicable, magical and mysterious. Many authors – from Antipater of Sidon and Fischer von Erlach to Deborah Cadbury with the BBC – have produced lists of their favourite man-made wonders, lists with contents that reflect the essence of human existence – our emotions, vanities and aspirations as well as our humility, fears and mortality.

‘In my travels I found no answers, only wonders.’

Marty Rubin (American writer and journalist, 1930-1994)

Cataloguing the Creative Spirit. Conclusion

'The more clearly we can focus our attention on the wonders and realities of the universe about us the less taste we shall have for destruction. Wonder and humility are wholesome emotions, and they do not exist side by side with a lust for destruction.'

Rachel Carson (American biologist and conservationist, 1907-1964)

However diverse these inventories may be, their authors share one thing in common: they want to collect and record the wonderful and precious creations of this world. Collectively these inventories form a history of a creative spirit, each of them illustrating something extraordinary on a universal scale.

They represent a catalogue of contemporary testimonies to human creativity and natural conditions. None of the authors have ranked their selections, so the sites and phenomena are of equal merit. They describe their selections as unique, beautiful, spectacular, rich, spiritual, intellectual, artistic, superlative

or inventive. Whether driven by love, fear, death, hope, belief, tradition, symbolic meaning, responsibility or science, all these listed wonders inspire awe and amazement. It is our duty to take stock of these lists of wonders and continue to add to them. But why? Because these sites make people think, not once, but time and time again. They impress us, intrigue us, and bring the world around them to a momentary standstill, capturing us in wonderment. They inspire admiration, question any form of limitation, challenge and evoke the power of creative processes, whether natural or technological. They drive us to embrace our fears, dreams and fantasies to confront the enigmas of space and time. They keep alive the spirit of the mysterious, universal beauty and wonderment. Altogether these selected sites exemplify the continued progress that people have made throughout history as well as their concern for the future of Planet Earth.



What Makes a Man-Made Wonder?

Tihamér Salij

Mystery. The Act of Wondering

‘When the first encounter with some object surprises us, and we judge it to be new, or very different from what we knew in the past or what we supposed it was going to be, this makes us wonder and be astonished at it.’

René Descartes (French philosopher, 1596-1650)

In general, the word ‘wonder’ is used in a rich variety of contexts. We experience wonder when we discover how something works and happens, when we see something for the first time or when something occurs repeatedly. Something we absorb through our senses, visual, tactile or as smell could cause us – the observers – to wonder, to question, to imagine and speculate on what is and what is not. It is in the nature of a child to wonder about the world around it. As children explore their surroundings they wonder what would happen if they push a button or open a door, what a dog feels like, why a plant died or how to make a bigger soap bubble. Experiencing wonder does not stop when we reach adulthood; it remains fundamental to our existence. As a matter of fact, wonder might be humankind’s most important emotional expression, something we do not outgrow as adults. Nevertheless, adults have a different relationship to wonderment, as they seek a more scientific understanding of the sensory world.

‘And I said, “Gabor, if I could think what I would do, other than architecture, it would be to write the new fairy tale, because from the fairy tale came the airplane, and the locomotive, and the wonderful instruments of our minds . . . it all came from wonder.”’

Louis Kahn (Estonian-born American architect, 1901-1974)

According to our perception, that which has been seen achieves the status of ‘wonder’ if it is exceptional, unique and one-of-a-kind, when it stands out from the ‘more-of-the-same’, the ‘similar-to-the-rest’. Seeing something makes us curious and prompts us to question how it was created and built. When something is wonderful we take delight in it, it makes us think it is unique, special and awesome instead of ‘merely’ good, which definitely would not be wonderful enough. But first and foremost it feeds our curiosity and is driven by a hunger for comprehension for its own sake.

The act of wondering creates a disruptive momentum, a spectacular interruption of mundane reality and brings us into intimate contact with the seen. For a fraction of a moment, the intimacy or closeness with the seen brings us to a standstill. It leaves us speechless, prompts a sense of doubt and perplexity, and renders all our actions and the familiar null and void. We may be briefly impressed, puzzled or intimidated by what confronts us. To be in wonder – surprised and bewildered – is an apocalyptic experience. Man-made world wonders trigger that apocalyptic experience, proclaiming the end of the world as we have known it and heralding a new world to come.

‘The larger the island of knowledge, the longer the shoreline of wonder.’

Huston Smith (American religious studies scholar and author, b. 1939)

Wondering occurs in a highly charged space between logic, credibility and disbelief, which is what man-made world wonders should advocate and embody. The novelty and uniqueness of man-made world wonders is a function of aspects of scale, technological intelligence and great storytelling. The core drivers that make man-made world wonders are superlatives measured on scales such as size or beauty, as well as by technological intelligence and great storytelling. They produce knowledge and feed human progress for better or worse.

Man-made world wonders are the archetypes of innovation in new scales, technologies and myths. A true built wonder excels in these aspects and it remains a wonder even though we might have a perfectly logical, scientific or technical explanation for it. Such wisdom or knowledge does not abolish wonder; our explanations and theories are often more wondrous than the object itself. And with it, we unravel the endless depths of the mysteries of life.

obviously nothing more human than the urge to speak and tell great stories. We tell stories about who we are, who we want to be and what matters to us. Everyone is a storyteller. Some tell better stories than others, but the substance of all our stories reflects the wonder of existence in a cruel but beautiful and mysterious world. Besides being storytellers we are also readers and listeners; we absorb and often believe the stories that surround us; sometimes we even become followers.

Storytelling bridges the many worlds inside people's minds. And translating these worlds into reality, into the physical world, could be called architecture, the stories of inhabiting spaces that force us all to become users. Architecture and the city, the accumulation of buildings, are stories with motives that capture the essentials of the human drama of inhabiting space and the attempt of survival within it. Architecture embraces a sequencing of events in which we temporarily become characters in scenes. These stories told by the language of architecture have a huge impact on our lives, as they tell us the story of how to behave, manoeuvre, navigate, use and inhabit a space. Architecture is also a décor that tells us the story of practicalities, which lies in fulfilling the physical need of shelter, and tells a tale of technological implications, structure, style, passion and beauty.

*'The world is full of magic things, patiently waiting
for our senses to grow sharper.'*

W.B. Yeats (Irish poet, 1865-1939)

Armstrong explains that these stories, our self-created myths, enable us to 'live more intensely within the world', rather than 'opting out of this world'. Myths bind us to the world around us and we perform the events of our lives within the mythology we create.

Whether they are couched in words, pictures or architecture, myths are stories told by humans that reaffirm our very existence, are reflections of our perception and the empirical world. According to Karen Armstrong, a myth tells us 'how we should behave' and puts us 'in the correct spiritual or psychological posture for right action, in this world or the next'. Myths give us a reason to execute our lives in a humane setting – or at least in one that we believe to be humane – namely the city. The city and its architectures are a physical realization and materialization of many myths, old and new, which come together. Cities reflect the ongoing myth in which we live, love, understand, make ourselves comfortable, find enjoyment and die.

Stories told in architectural language encapsulate myth and the eternal conflict between opposing themes: sinner and saint, hero and villain,

forbidden lust and unconditional love. They embrace mystery, adventure, magic and wanderlust, divine energies such as love, compassion empathy and equanimity, and the eternal battle to overcome our own demons of anger, hostility, guilt, shame and fear.

So the stories we choose to follow, realize and inhabit had better be good ones!

*'Mystery creates wonder and wonder is the basis
of man's desire to understand.'*

Neil Armstrong (American astronaut, 1930-2012)

Man-made world wonders reinforce existing myths and can also demystify them, while creating powerful new stories that reframe our life journey and our relationship with the planet.

Man-made world wonders embody these outstanding creative processes and empower us with knowledge and confidence to take responsibility for the things we create, for the environments we compose, and the architectures we construct and inhabit. Man-made world wonders empower the perpetual myths and secrets of human existence and achievements, thus nourishing the mystery of above-average human existence: the supernatural. They are the keepers and re-presenters of human legacy and possess the characteristic of advocating a wonderful and exceptional, exaggerated or idealized narrative on love, beauty and despair that makes us believe in old and new mysteries of human life and endless possibilities to create.

Everything we create – objects, buildings, brands, cities and environments – is an encapsulation of myths. The myth is etymologically related to words such as mother, matrix, time, measurement, music, matter, meter, mata and mater. Myth is the womb of creation through which the infinite becomes quantified and finite in the world of space-time and causality. Myth as story reveals the creative process itself.

We need to dare to tell great stories about love, death, survival, beauty and victory, about the vices and virtues of human life. We therefore need to reclaim and embrace the spiritual in the things we create, the environments we shape and the architectures we erect.



How Can Imagination be Explored?

Tihamér Salij

Translating traditional vocabulary of wonderment

'The future belongs to those who believe in the beauty of their dreams.'

Eleanor Roosevelt (former First Lady of the USA, 1884-1962)

Man-made world wonders are a testament to the spirit of wondering and how we try to understand and answer the questions we are continuously confronted with. Have we unlearned how to wonder – and how to provoke wonder? Can we still make world wonders? Can we imagine a world full of wonders? How can we explore the timeless human desire for wonder and wonderment? How can we translate the traditional vocabulary of wonderment – words like love, fear, hope, beauty, universality, perfection, precision, sublime, despair, mysterious, lightness, allure, the crazy and fantastic –

into twenty-first-century thinking? And how can we produce buildings, structures and environments with this new lexicon? What scales and superlatives, technologies and myths will the next generation of man-made world wonders be comprised of? What will we marvel at next? Where on the globe could new wonders emerge? Can we articulate the visions that our societies and technologies are already poised to realize, but also imagine new fascinations, follow new dreams, define new records to beat, take further responsibility for the environment, and speculate about the structures that architecture could offer us in the future?

Man-made world wonders have traditionally been listed and categorized as tombs, temples and shrines, palaces, fortifications, statues and monoliths. Their locations mark the epicentres of historical power around the globe. Man-made wonders are in fact symbols of a higher state of consciousness that allows us to tap into the collective imagination and our collective longing to accomplish the extraordinary. They lift us to heights of passion and ecstasy. However, to take



Tomorrow's Possible Wonders?


Based on The Why Factory studios

The Third Life Centre

*'What is reality, anyway?
Just a collective hunch.'*

Lily Tomlin (American actress and comedienne, b. 1939)

Facts:	
Classification:	Connector, Society Adjuster
Programme:	Virtual gaming centre
Client:	Global Gaming Association
Location:	City Tokyo
	Country Japan
	Continent Asia
Size:	Diameter 1 km
	Height 980 m (free height)
	Volume 520,000,000 m ³
Number of users:	1,750,000,000 users worldwide
Visitor capacity:	270,000
Construction time:	7 years

An aerial photograph of a sprawling, dense city, likely Tokyo, with a massive, glowing, translucent sphere floating in the sky above the city center. The sphere has a bright, ethereal light emanating from it, and its surface appears to have a grid-like pattern. The city below is a dense grid of buildings, with a river visible on the right side. The sky is filled with soft, white clouds, and the overall lighting is bright and slightly hazy.

In 1748 the visionary French architect Étienne-Louis Boullée designed his Cenotaph for Newton as a visual spectacle, a giant sphere punctured by holes that create the illusion of suspended stars, while here in the twenty-first century this Third Life Centre provides shelter for those who wish to escape from gravitational reality into virtual weightlessness. With a diameter of almost 1 km, the size of this Boullée-like structure is astonishing, exceeding any realized or imagined spherical buildings and embodying the ultimate simulator of virtual reality. The Third Life Centre is a true gaming centre. The shape of this building represents the magnificence of a perfect spherical form and symbolizes a perfectly integrated, futuristic metropolis pulsating with life, rhythm and virtual landscapes. This sphere caters to an advanced civilization that understands life and survival of the fittest by connecting it to the illusion of the virtual world. Time in the Third Life Centre becomes a vague, non-existent dimension.

The Floating Gardens

‘People think of heaven as a paradise garden. A place where they can float on clouds and laze in rivers and mountains. But scenery without solace is meaningless.’

Mitch Albom (American author, b. 1958)

Facts:

Classification:	Purifier
Programme:	Nature, recreation
Client:	Municipal Corporation of Greater Mumbai
Location:	City Mumbai Country India Continent Asia
Orientation:	Spans southwards over Mumbai from the airport to the southern coast
Altitude:	between 200 and 300 m
Size:	Length 10 km Width 5 km Surface 24,050,000 m ² Max. thickness of soil 2–6 m Max. vegetation height 12–15 m Max. depth of hydrogen balloon 45 m Total weight 3,098 megatonnes
Material:	Vegetation Ironwood trees, Jamun trees, Flame of the Forest (or Parrot) trees, Tulasi plant Polychloroprene (better known as Neoprene) with aluminium and non-flammable coatings Hydrogen 2,613,000,000 m ³ (Net force: 310,450,530,000 N)
Weather conditions at an altitude of 250 metres:	Wind Wind speed at an altitude of 300 m is 19.2 km/h (gentle breeze, Beaufort 3) Average temperature 27.2 °C
Visitors per day:	600,000 people
Construction time:	32 months

With a surface area of 24,050,000 m², the Floating Gardens of Mumbai cover almost 50 per cent of the city. Like a flying carpet they add a fresh green tint to the greyness of the city, which gradually fades into the bluish sky. They move slowly, uniformly, continuously, the gardens seem to search constantly for their perfect position. Hydrogen-filled balloons that are up to 45 m high, depending on the amount of soil and flora and fauna they accommodate at a particular spot, carry a total weight of 3,098 megatonnes. This new paradisiacal territory floats above the concrete jungle of Mumbai, controlling the climate and purifying the air, but first and foremost it reinstates the city's natural character and qualities. It seems to free its architectural heaviness from its gravitational force. It introduces levitation into architectural being. Aeroponic technology mixed with pockets of highly concentrated fertile soil is used to grow the flora and attract animal life, especially large numbers of birds, insects and other small animals from the birds' food chain. It counterbalances the qualities of the concrete jungle below like a vast paradisiacal roof garden.



The Global Shortcut

'Speed, it seems to me, provides the one genuinely modern pleasure.'

Aldous Huxley (English writer, 1894-1963)

Facts:		
Classification:	Connector	
Programme:	Tunnel	
Client:	Brazilian Foreign and Commonwealth Office in collaboration with the Vietnamese Foreign Policy Department	
Location:		
	City	Rio de Janeiro, Ho Chi Minh City
	Country	Brazil, Vietnam
	Continent	South America, Asia
Size:		
	Tunnel diameter	26 m
	Length:	Normally 16,536 km, becomes c. 8,700 km straight through the earth (Source: http://www.mapcrow.info)
	Altitude	max. +45 m, min. -2,900 km
	Tunnel volume	4,619,083,678 m ³
	Truckloads of excavated earth:	230,954 (using a 20-tonne truck)
Materials:		
	Tunnel	Reinforced carbon with a melting point of 4,915°C
	Vehicle	Reinforced tungsten steel with a melting point of 4,695°C
Construction details:		
	Normal drilling machine	20 m/day, taking 182,500 days (500 years) working in both directions

	Drilling machine required Timescale	2,000 m/day, taking 1,825 days (5 years) 5 years for drilling, 10 years for construction
Vehicle:		
	Dimensions	16 m diameter sphere
	Classes	Business (8 luxury seats) and General (16 seats)
Energy:	40 gigawatt is required to power the maglev guidance system's vacuum pumps	
General:	Gravity train supported by a maglev guidance system	
	Capacity per car	24 people
	Number of operating cars:	84
	Capacity per day	34,560 people
	Train journeys per day	1,440 one-way trips or 720 round trips
	Lines:	2
	Frequency	Round trip in 1 hour 30 minutes
	Trains per line	42 at a 1-minute interval
	Speed	max. 8 km/s = 28,800 km/h
	Duration	42 minutes
	Acceleration	9.8 m/s ² up to 11.4 m/s ²
	Coriolis Effect sideways speed:	max. 2,414 km/h
	Pressure in tunnel:	max. 48,000,000 psi
	Mantle convection speed:	20 mm/annum, may vary closer to the core

Travelling from Rio de Janeiro straight down to Ho Chi Minh City in 42 minutes, the Global Shortcut makes the ultimate dream of the globetrotter a reality. Spherical vehicles with a diameter of 16 m carry up to 24 passengers to the other side of the world, travelling at a speed of 28,000 km per hour. The global shortcut handles about 35,000 passengers per day on just two lines; one line per direction. The annual capacity of the Global Shortcut is 12.7 million passengers, which means that, if used to full capacity, the total population of Rio de Janeiro can travel to Ho Chi Minh City within 365 days, while the 8 million inhabitants of Ho Chi Minh City can travel to Rio within just 228 days.



Do We Need New Architectural Myths?

Epilogue

Tihamér Salij

‘Is it folly to believe in something that is intangible? After all, some of the greatest intangibles are Love, Hope, and Wonder. Another is Deity. The choice to be a fool is yours.’

Vera Nazarian (Russian-born American writer, b. 1966)

Architectural wonders keep reminding us of how creative and inventive we are. They challenge and renew our wonderment with the world and continue to push the creative ability of humankind beyond unimagined limits. Man-made world wonders are custodians of our legacy of survival in a cruel world that is dominated by uncertainties. With their advanced technologies they feed human progress and provide evidence of ingenuity. They unite and propagate a collective sense of confidence, unity, joy and universal beauty. They indicate new directions for our futures, restore our faith and offer a hopeful glimpse of certainty. They are pioneers in science and smart technologies, embody record-breaking sizes, and tell great stories about fear, love, death, survival and hope. They speak to our collective longing for truth, goodness, harmony and evolution on the road to enlightenment.

Besides being important social and cultural assets, man-made world wonders are sources of innovation and inspiration and have a great impact on the broader economy. Investment in creating more man-made world wonders is important because they

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t?f
The Why Factory

TU Delft

**NEW WONDERS
FOUNDATION**

MVRDV

We want world wonders.

The Pyramids of Giza, the Hanging Gardens of Babylon, the Eiffel Tower – these are current world wonders . . .

They seem to play a role on the scale of the planet.

They are the dreams of all architects, children, politicians, leaders and clients.

They are surrounded by stories and myths.

They make us wonder.

They make us think.

They impress us and thus somehow guide us.

They put our daily lives and efforts into perspective.

They are marks of the times.

But how to make them?

This book explores the world of architectural wonders and wonderment.

It examines current classifications and it wonders about new categories.

Through the eyes of students it speculates on possible fields that might propel us towards the realization of new world wonders, of exemplary and wonderful projects. It forms a new atlas of wonders.

We Want World Wonders is the seventh book in The Why Factory's Future Cities series, the sequel to *The Why Factor(y)*, *Visionary Cities*, *Green Dream*, *Vertical Village*, *Hong Kong Fantasies* and *City Shock*.

