

## An Engineer Imagines

In *The Structure of Design*, Leslie Earl Robertson recounts a storied career in engineering which has generated among the most innovative and formally daring buildings of the modern era, as well as his extensive collaborations with several titans of the practice: Minoru Yamasaki, Philip Johnson, Max Abramovitz, Romaldo Giurgola, I. M. Pei, Pei Partnership, KPF, Kiyonori Kikutake, and Gunnar Birkerts. Robertson's large-scale projects with some of the leading sculptors of the day, including Richard Serra and Beverly Pepper, display the range of this engineer's craft. As a restless student from modest origins, Robertson's first encounters with engineering were almost accidental, yet he would go on to be lead engineer of the landmark IBM buildings in Pittsburgh and Seattle while still in his early thirties. Immediately thereafter he embarked on what would become his most renowned project, the World Trade Center, to be followed by scores of major buildings around the world. *The Structure of Design* is a personal and accessible chronicle of the partnerships and problem-solving that have forged classics of modern architecture, and a privileged look at how the key discipline of engineering influences design, as told by a genius and poet of structure.

This is a STEM book and more! An inspiring, inclusive, whimsical way to learn about computers and technology from real-life trailblazers. Ara is a young girl who loves BIG numbers. She wants to count all the stars in the sky... but how? This is an upbeat adventure of Ara and her sidekick droid, DeeDee ("Beep!"). They use smarts and grit to solve a BIG problem and discover an amazing algorithm! A quest that takes them through a whirlwind of intriguing locations at Innovation Plex -- Data Centre, Ideas Lab, Coding Pods, and X-Space. Along the way, they encounter real-life women tech trailblazers of diverse backgrounds, including a Tenacious Troubleshooter, an Intrepid Innovator, a Code Commander, and a Prolific Problem Solver. They tinker-and-tailor, build-and-fail, launch-and-iterate, and in the end discover an amazing algorithm of success -- coding, courage, creativity, and collaboration ("Beeeeeep!"). Read the book, download hands-on activities, follow further learning resources. Experience the story in immersive ways never done before... coming soon! Ara is making a splash with industry CEOs and best-selling kids authors. "If she can see it, she can be it.' With this story, girls can see leaders and be inspired to become one. A book for all ages and genders!" - Geena Davis, Founder and Chair, Geena Davis Institute on Gender in Media

"A delicate contemporary tale about the quiddities of love and the perpetual mysteries of human motivations" from the bestselling Israeli author of *Judas* (Los Angeles Times). A New York Times Notable Book of the Year At Tel-Kedar, a settlement in the Negev desert, the longtime love affair between Theo, a sixty-year-old civil engineer, and Noa, a young schoolteacher, is slowly disintegrating. When a pupil dies under difficult circumstances, the couple and the entire town are thrown into turmoil. Amos Oz explores with brilliant insight the possibilities—and limits—of love and tolerance. "A rich symphony of humanity . . . If Oz's eye for detail is enviable, it is his magnanimity which raises him to the first rank of world authors." —Sunday Telegraph (UK) "Vivid, convincing, and haunting." —The New York Times Book Review "A vividly and affectionately detailed picture of Israeli village life—and of what might be called a JulyOctober relationship—by acclaimed essayist and novelist Oz . . . A perfectly pitched comedy, expertly translated, and one of Oz's most attractive and accomplished books." —Kirkus Reviews "This novel, his 10th (after *Fima*), is set in Tel Kedar, a quiet desert town in the Negev that is both a microcosm of Israeli society and a vividly evoked setting whose atmosphere and residents are palpable . . . his story carries thought-provoking implications." —Publishers Weekly "Skillfully alternating point of view between his two main characters, Oz shows us the painful process by which a couple uncouples, one sinew at a time." —Booklist

A monograph of forty complex structures by the Princeton University professor and structural engineer Guy Nordenson.

Biografie van de Deense ingenieur (1895-1988).

As a young girl climbs the seven stories to her own (very boring!) apartment, she imagines what's behind each of the doors she passes. Does the door with all the locks belong to a family of thieves? Might the doorway with muddy footprints conceal a pet tiger? Each spread reveals—in lush detail—the wilds of the girl's imagination, from a high-flying circus to an underwater world and everything in between. When the girl finally reaches her own apartment, she is greeted by her parents, who might have a secret even wilder than anything she could have imagined! Since it was established by Ove Arup in 1946, Arup has been the design, architectural and engineering genius behind many of the world's leading buildings and urban areas. The team has been pivotal in creating some of the world's best-known developments: from the groundbreaking Sydney Opera House to the unconventional Centre Pompidou in Paris and Crossrail, the largest construction project in Europe today. Beyond iconic buildings, Arup's influence is also in evidence behind the scenes. The hidden hand of the engineer has transformed many of our everyday experiences - often without us knowing. Arup has developed leading fire-safety systems in airports, cooling systems in museums to protect priceless artworks, and its experience with acoustics ensures every note is heard in the world's leading opera houses. The book focuses on some of the biggest global issues to arise over the past 70 years. They include the population explosion and subsequent increase in city living, as well as changes in transport patterns that have fuelled the construction of airports, roads, rail and bridges, and even the democratisation of sporting events. Looking at Arup's work under the lens of these world-shaping events, we show how this is a firm that has not just responded to a changing world, but has anticipated and led many of those changes. Arup takes its place in society seriously. Collaborations such as the partnership with C40 to tackle climate change are impacting the way future generations will live. Looking to the future, this is a firm that will continue on its mission to shape a better world.

This book is published in English for the first time. The first edition in French sold extremely well and this second edition has the added benefit of an 8 page colour section and nine new case studies not only from France but from Norway, London.

"This, the first published book on the life and work of Fazlur Khan, stands as a powerful testament to this revolutionary mind - and to the technological advances it engendered. Imagine you woke up one morning to find everything created by engineers had disappeared. What would you see? No cars, no houses; no phones, bridges or roads. No tunnels under tidal rivers, no soaring skyscrapers. The impact that engineering has had on the human experience is undeniable, but it is also often invisible. In *BUILT*, structural engineer Roma Agrawal takes a unique look at how construction has evolved from the mud huts of our ancestors to skyscrapers of steel that reach hundreds of metres into the sky. She

unearths how engineers have tunnelled through kilometres of solid mountains; how they've bridged across the widest and deepest of rivers, and tamed Nature's precious – and elusive – water resources. She tells vivid tales of the visionaries who created the groundbreaking materials in the Pantheon's record-holding concrete dome and the frame of the record-breaking Eiffel Tower. Through the lens of an engineer, Roma examines tragedies like the collapse of the Quebec Bridge, highlighting the precarious task of ensuring people's safety they hold at every step. With colourful stories of her life-long fascination with buildings – and her own hand-drawn illustrations – Roma reveals the extraordinary secret lives of structures.

Seismic Design for Architects shows how structural requirements for seismic resistance can become an integral part of the design process. Structural integrity does not have to be at the expense of innovative, high standard design in seismically active zones. \* By emphasizing design and discussing key concepts with accompanying visual material, architects are given the background knowledge and practical tools needed to deal with aspects of seismic design at all stages of the design process \* Seismic codes from several continents are drawn upon to give a global context of seismic design \* Extensively illustrated with diagrams and photographs \* A non-mathematical approach focuses upon the principles and practice of seismic resistant design to enable readers to grasp the concepts and then readily apply them to their building designs Seismic Design for Architects is a comprehensive, practical reference work and text book for students of architecture, building science, architectural and civil engineering, and professional architects and structural engineers.

Holman covers the broad field of sound accompanying pictures, from the basics through recording, editing and mixing for theatrical films, documentaries and television shows. In each area, theory is followed by practical sections.

Geïllustreerde uitgave over leven en werk van de in Noord-Ierland geboren architect (1935-1992)

A Fun Story about Courage and Kids Dealing with Problems in a Healthy Way Part of a series about kids dealing with everyday hurdles and accomplishments, You're a Brave Kid!, thoughtfully written by Sandrina Kurtz, shows that problems are better solved when shared with loved ones. When Magnolia accidentally makes a small mess in the kitchen, it quickly escalates into a greater problem. The hilarious illustrations by John Kurtz show just how large a disaster Magnolia imagines it to be. Only by being brave does she realize it was never the big deal she worried it was. With a positive and reassuring message for all children, this is a fun and engaging book for parents and kids alike, to be enjoyed over and over.

"A gifted and thoughtful writer, Metzl brings us to the frontiers of biology and technology, and reveals a world full of promise and peril." — Siddhartha Mukherjee MD, New York Times bestselling author of The Emperor of All Maladies and The Gene Passionate, provocative, and highly illuminating, Hacking Darwin is the must read book about the future of our species for fans of Homo Deus and The Gene. After 3.8 billion years humankind is about to start evolving by new rules... From leading geopolitical expert and technology futurist Jamie Metzl comes a groundbreaking exploration of the many ways genetic-engineering is shaking the core foundations of our lives — sex, war, love, and death. At the dawn of the genetics revolution, our DNA is becoming as readable, writable, and hackable as our information technology. But as humanity starts retooling our own genetic code, the choices we make today will be the difference between realizing breathtaking advances in human well-being and descending into a dangerous and potentially deadly genetic arms race. Enter the laboratories where scientists are turning science fiction into reality. Look towards a future where our deepest beliefs, morals, religions, and politics are challenged like never before and the very essence of what it means to be human is at play. When we can engineer our future children, massively extend our lifespans, build life from scratch, and recreate the plant and animal world, should we?

A little boy, living out his fantasy of driving his own freight train, describes the different cars, what each carries, how they are connected, and more.

Kelly loves the cabin she has created out of a huge cardboard box and she would like to find the right person to share it with.

A young boy spots sweets and treats on the kitchen table. In a classic fairy-tale quest, he imagines himself a brave hero who must outwit ferocious dragons and formidable guardians in order to partake of such a treasure. Caught and sent to the dungeon (his bedroom), the boy is surprised when the afternoon ends so unexpectedly happily. This read-aloud edition is narrated by Julie Lawson.

What will the world look like in thirty years' time? How will humanity survive the oncoming effects of climate change? Set in the near future and inspired by the world around us, Gravity Is Heartless is a romantic adventure that imagines a world on the cusp of climate catastrophe. The year is 2050: automated cities, vehicles, and homes are now standard, artificial Intelligence, CRISPR gene editing, and quantum computing have become a reality, and climate change is in full swing—sea levels are rising, clouds have disappeared, and the planet is heating up. Quinn Buyers is a climate scientist who'd rather be studying the clouds than getting ready for her wedding day. But when an unexpected tragedy causes her to lose everything, including her famous scientist mother, she embarks upon a quest for answers that takes her across the globe—and she uncovers friends, loss and love in the most unexpected of places along the way. Gravity Is Heartless is bold, speculative fiction that sheds a hard light on the treatment of our planet even as it offers a breathtaking sense of hope for the future.

This book is a collaborative enterprise, British, French and Irish, representing the countries where Peter Rice passed most of his life and the cultures that formed him.

When a small-town family is pushed to the brink, how far will they go to protect one of their own? An edgy, propulsive read about what we will do in the name of love and blood Tony has always looked out for his younger brother, Nick. So when he's called to a hospital bed where Nick is lying battered and bruised after a violent sexual assault, his protective instincts flare, and a white-hot rage begins to build. As a small-town New England lawyer, Tony's wife, Julia, has cases involving kids all the time. When Detective Rice gets assigned to this one, Julia feels they're in good hands. Especially because she senses that Rice, too, understands how things can quickly get complicated. Very complicated. After all, one moment Nick was having a drink with a handsome stranger; the next, he was at the center of an investigation threatening to tear not only him, but his entire family, apart. And now his attacker, out on bail, is disputing Nick's version of what happened. As Julia tries to help her brother-in-law, she sees Tony's desire for

revenge, to fix things for Nick, getting out of control. Tony is starting to scare her. And before long, she finds herself asking: does she really know what her husband is capable of? Or of what she herself is? Exploring elements of doubt, tragedy, suspense, and justice, *The Damage* is an all-consuming read that marks the explosive debut of an extraordinary new writer.

"Peter Rice (1935-1992) was perhaps the most influential structural engineer of this century. The hundreds of buildings he worked on include such masterpieces as the Sydney Opera House, the Pompidou Centre, and Menil Collection, and Lloyd's of London." "This is Peter Rice's autobiography. He tells the stories behind his best-known works, and describes his childhood in Ireland, his experiences with other great engineers including Jean Prouve and Ove Arup, and his views on materials - glass and polycarbonate, steel and concrete, stone, fabric. But above all, *An Engineer Imagines* is about the creative, humanist role of the engineer." --Book Jacket.

David McClurry presents his latest invention, a type of radio-frequency identification (RFID) device before the department of commerce in June of 2035. Though very interested by the potential applications of this new hardware in an effort to improve the American economy, the department decides to pass on David's project. Their decision prompts him to try his luck in politics and launch his own political party three years later. Notwithstanding the lack of campaign and advertisement funds, McClurry runs for President in the fall of 2038. His political party in limbo after an unexpected arrest and beaten by John Morey of the Democratic Party, David is sentenced to ten years in federal prison for having avenged the murder of a friend. As Morey comes across David's project the following summer, he sets him free from prison temporarily and asks him to run *The Chip*, hopefully improving the economy. Aware of Morey's scheme and unable to fully carry out the Democrats' plan, McClurry becomes the new Dictator of the United States and the new leader of an unprecedented post-capitalist world.

Belfast, 1914. Two years after the sinking of the Titanic, high society has become obsessed with spiritualism. In their collective grief they are attempting to reach their departed through séances. William Jackson Crawford is a man of science and a sceptic, but one night with everyone sitting around the circle, voices come to him seemingly from beyond the veil, placing doubt in his heart and a seed of obsession in his mind. Could the spirits truly be communicating with him or is this one of Kathleen's parlour tricks gone too far? Based on the true story of William Jackson Crawford and famed medium Kathleen Goligher, and with a cast of characters that includes Arthur Conan Doyle and Harry Houdini, *West* conjures a haunting tale that will keep you guessing until the end.

"At the core, *Hit Refresh*, is about us humans and the unique quality we call empathy, which will become ever more valuable in a world where the torrent of technology will disrupt the status quo like never before." – Satya Nadella from *Hit Refresh* "Satya has charted a course for making the most of the opportunities created by technology while also facing up to the hard questions." – Bill Gates from the Foreword of *Hit Refresh* The New York Times bestseller *Hit Refresh* is about individual change, about the transformation happening inside of Microsoft and the technology that will soon impact all of our lives—the arrival of the most exciting and disruptive wave of technology humankind has experienced: artificial intelligence, mixed reality, and quantum computing. It's about how people, organizations, and societies can and must transform and "hit refresh" in their persistent quest for new energy, new ideas, and continued relevance and renewal. Microsoft's CEO tells the inside story of the company's continuing transformation, tracing his own personal journey from a childhood in India to leading some of the most significant technological changes in the digital era. Satya Nadella explores a fascinating childhood before immigrating to the U.S. and how he learned to lead along the way. He then shares his meditations as a sitting CEO—one who is mostly unknown following the brainy Bill Gates and energetic Steve Ballmer. He tells the inside story of how a company rediscovered its soul—transforming everything from culture to their fiercely competitive landscape and industry partnerships. As much a humanist as engineer and executive, Nadella concludes with his vision for the coming wave of technology and by exploring the potential impact to society and delivering call to action for world leaders. "Ideas excite me," Nadella explains. "Empathy grounds and centers me." *Hit Refresh* is a set of reflections, meditations, and recommendations presented as algorithms from a principled, deliberative leader searching for improvement—for himself, for a storied company, and for society. *Introducing The Effective Engineer*--the only book designed specifically for today's software engineers, based on extensive interviews with engineering leaders at top tech companies, and packed with hundreds of techniques to accelerate your career.

WINNER OF THE INTERNATIONAL DUBLIN LITERARY AWARD WINNER OF THE GOLDSMITHS PRIZE LONGLISTED FOR THE MAN BOOKER PRIZE BGE IRISH BOOK OF THE YEAR 2016 Marcus Conway has come a long way to stand in the kitchen of his home and remember the rhythms and routines of his life. Considering with his engineer's mind how things are constructed - bridges, banking systems, marriages - and how they may come apart. Mike McCormack captures with tenderness and feeling, in continuous, flowing prose, a whole life, suspended in a single hour.

The long-awaited reissue of the autobiography of Peter Rice, one of the main structural engineers behind the Sydney Opera House, the Pompidou Centre, the Menil Collection and Lloyd's of London. 'I am an engineer. Often people will call me an 'architect engineer' as a compliment. It is meant to signify a quality of engineer who is more imaginative and design-orientated than a normal engineer... To call an engineer an 'architect engineer' because he comes up with unusual or original solutions is essentially to misunderstand the role of the engineer in society.' *An Engineer Imagines* is a rare look into the professional creativity and philosophy of Peter Rice, who was widely acclaimed as the greatest structural engineer of his generation. He was a man who, in Renzo Piano's words, could design structures 'like a pianist who can play with his eyes shut'. Working with many of the world's greatest architects on buildings that became icons of contemporary architecture, he brought a uniquely poetic feeling to his work. Joining Ove Arup & Partners in 1956, Rice had heard that 'it was a place where an oddball could fit in.' Taking on Arup's theory of Total Design to heart, Rice writes about the role of the engineer in society, and how he himself applied his creativity to various projects. He admits he became an engineer by accident, tentatively feeling his way through a career without a natural instinct. But as he takes you through each of his projects, one-by-one, you can trace his development from graduate to veteran. Written in clear and poetic language, Rice's autobiography is perfect for those who want to better understand postwar buildings, our concrete environment, or are budding students of engineering and architecture.

Find out where great ideas come from in this "delightful account of how inventors do what they do" (Kirkus Reviews, starred review). A father cleans up after his toddler and

imagines a cup that won't spill. An engineer watches people using walkie-talkies and has an idea. A doctor figures out how to deliver patients to the operating room before they die. By studying inventions like these—the sippy cup, the cell phone, and an ingenious hospital bed—we can learn how people imagine their way around “impossible” problems to discover groundbreaking answers. Pagan Kennedy reports on how these enduring methods can be adapted to the twenty-first century, as millions of us deploy tools like crowdfunding, big data, and 3-D printing to find hidden opportunities. Inventology uses the stories of inventors and surprising research to reveal the steps that produce innovation. Recent advances in technology and communication have placed us at the cusp of a golden age; it's now more possible than ever before to transform ideas into actuality. Inventology is a must-read for designers, artists, makers—and anyone else who is curious about creativity. By identifying the steps of the invention process, Kennedy reveals the imaginative tools required to solve our most challenging problems. “There's ample interest here even for readers who aren't actively inventing anything.” —The Boston Globe  
New York Times bestselling author Kim Stanley Robinson returns with a bold and brilliant vision of New York City in the next century. As the sea levels rose, every street became a canal. Every skyscraper an island. For the residents of one apartment building in Madison Square, however, New York in the year 2140 is far from a drowned city. There is the market trader, who finds opportunities where others find trouble. There is the detective, whose work will never disappear -- along with the lawyers, of course. There is the internet star, beloved by millions for her airship adventures, and the building's manager, quietly respected for his attention to detail. Then there are two boys who don't live there, but have no other home -- and who are more important to its future than anyone might imagine. Lastly there are the coders, temporary residents on the roof, whose disappearance triggers a sequence of events that threatens the existence of all -- and even the long-hidden foundations on which the city rests.

Describes methods used by early irrigators, architects, and military engineers to build and maintain structures to serve their ruler's wants.

Balmond is making the transition from structural engineer working alongside other architects to an architect in his own right. His structural thinking differs from that of others in his field, in its completely innovative conception of the engineer's contribution to architecture. The plasticity of architectural plans is enhanced through a decisive promotion of their structural designs. The borderline between structure and architecture thus becomes increasingly blurred. This process is explained in detail in "Informal" by reference to eight seminal projects. Balmond elucidates the theoretical basis of his engineering and architectural solutions, and his sketches transcend purely technical illustration - they are key to his approach. "Informal" invites readers to rethink their understanding of the relationships between architecture, design and engineering.

Using real working drawings from a 50 year career, Ron Slade shows how drawing remains at the heart of the design process in the everyday working life of engineers and architects. The book explains simple techniques that can be learnt and used to enhance any professional's natural ability. Using over 180 categorised examples it demonstrates that drawing remains the fastest, clearest and most effective means of design communication. Unlike many other books on drawing in the construction industry, this book is 'engineer led' and science oriented but effectively shows that there is a close affinity between the working methods of architects and engineers.

A look at engineering education today? with an eye to tomorrow Engineering education is in flux. While it is increasingly important that engineers be innovative, entrepreneurial, collaborative, and able to work globally, there are virtually no programs that prepare students to meet these new challenges. Shaping Our World: Engineering Education for the 21st Century seeks to fill this void, exploring revolutionary approaches to the current engineering curriculum that will bring it fully up to date and prepare the next generation of would-be engineers for real and lasting professional success. Comprised of fourteen chapters written by respected experts on engineering education, the book is divided into three parts that address the need for change in the way engineering is taught; specific innovations that have been tested, why they matter, and how they can be more broadly instituted; and the implications for further changes. Designed to aid engineering departments in their transition towards new modes of learning and leadership in engineering education, the book describes how to put into practice educational programs that are aligned with upcoming changes, such as those proposed in the NAE's Engineer of 2020 reports. Addressing the need to change engineering education to meet the demands of the 21st century head on, Shaping Our World condenses current discussions, research, and trials regarding new methods into specific, actionable calls for change.

The title is a tribute to the Le Corbusier book "Toward an Architecture" in which he explored the need for a new (modern) architecture. This book maintains the similar purpose of exploring the need for a new (structural) engineering, an engineering which delves more into art and architecture, an engineering which is more inclusive, which sets its sights higher and broader. It is a quest for engineers' new identity. Today, engineering is still seen as only a technical, analytical or calculating effort which has nothing to do with invention or creativity. Engineers have lost the glamour of the past - and this statement can be heard by engineers all over the world. They are willingly (or not) accepting the role of technical support to the architect, becoming its technical servant. It is a challenging time for structural engineering. This book is a rare possibility for structural engineers to consider the meaning of their profession, to meditate about it and its relation to, or distinction from, the practice of architecture. This is a collection of thoughts but not conclusions and theories. These are simply the reflections of a practitioner. The book is recommended for all structural and architectural engineers, as well as to students of engineering and architecture, especially those who have chosen structural engineering as their life-long profession. It is an eye-opening book that will provide a clearer, more realistic perspective while also offering an idea of where engineers will be in the future and how they should adapt to the time that comes. Going beyond even the expertise of archaeologists and historians, world-class engineer Craig B. Smith explores the planning and engineering behind the incredible Great Pyramid of Giza. How would the ancient Egyptians have developed their building plans, devised work schedules, managed laborers, solved specific design and engineering problems, or even improvised on the job? The answers are here, along with dazzling, one-of-a-kind color photographs and beautiful hand-drawn illustrations of tools, materials, and building techniques the ancient masters used. In his foreword to the book, Egypt's Undersecretary of State for the Giza Monuments Zahi Hawass explains the importance of understanding the Great Pyramid as a straightforward construction project.