

**Engineering That Endures**

**30**  
**ECAS**

years of engineering excellence







The background of the image features a series of thin, light blue lines that curve and intersect across the white space, creating a sense of motion and depth. The lines are most prominent on the left side and become sparser towards the right.

# **Engineering That Endures**

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**THE ENGINEER'S PROMISE**

“We build so others  
can go further”

Every structure, every beam, every line we draw, carries a piece of someone's future. Engineering isn't just about precision or calculations, it's about creating possibilities that last beyond us. Because when our work endures, people thrive, cities grow, and progress takes shape. That's the purpose that has guided ECAS from the very beginning.



# 30 YEARS OF **BUILDING WHAT MATTERS**

Singapore's skyline and subterranean veins did not happen by chance. They are the sum of countless technical decisions, quiet courage on site, and teams that turned complex problems into public structures people rely on every day. For thirty years, ECAS has been one of those steady hands, designing, checking and delivering the projects that make cities work.

ECAS's footprint reads like a map of Singapore's growth. Rail stations that connect neighbourhoods, bridges and roads that knit communities, utility projects that protect everyday life, and houses families call home. Each project is a quiet claim that building done well endures, and that what endures helps a city thrive.

Innovation has never been a trophy, but a habit. From DfMA to BIM, IPD and modular construction, ECAS invested early in tools and methods that reduce waste as well as raise productivity and standards. These choices earned the trust of clients and attracted engineers who want to learn, lead and build better.

But the real foundation is human. Engineers, site teams, partners and clients who share the risk and the responsibility. As the industry evolves, ECAS has committed to growing the talent behind the work through structured career pathways, continuous training and a strong learning culture. These efforts strengthen not only the firm, but the profession itself.

This book traces that journey. The ECAS30 journey. The projects, the people, the decisions and the quiet commitments, and the road ahead. From shaping Singapore to expanding across the region, it is the story of ideas that became plans, plans that became structures, and structures that endure.

# MESSAGE FROM THE **MANAGING DIRECTOR**

**W**hen I started ECAS thirty years ago, I did not imagine how far the journey would take us. We were a small team then, united by one simple belief, that good engineering improves lives. Over time, that belief became the foundation of everything we do.

The past three decades have changed our industry and our city in ways we could never have predicted. Yet one thing has remained constant: the responsibility we carry each time we put pen to paper or step onto a site. Our work shapes not just structures, but people's daily experiences, how they travel, live, and connect.

What we build is seldom for ourselves. We do not ride every train we help design, or live in every building we strengthen. Others do. That is the quiet truth of our profession, and the purpose that keeps us going. We build so others can go further.

I am proud of what ECAS has achieved, but even more grateful for the people who made it possible. The dedication of our engineers, the trust of our clients, and the support of our partners have allowed us to keep growing and innovating with every project.

As we look ahead, we will continue to adapt, to innovate, and to build with integrity. The technologies may change, but our purpose will not. We will keep engineering what endures. Thank you for being part of our journey.

**Chan Ewe Jin**  
Founder & Managing Director



# ENGINEERING

## WITH PURPOSE

For three decades, ECAS has shaped Singapore's built environment through trusted multidisciplinary engineering and consultancy. Founded in 1996, the firm has grown into a leading practice across civil, structural, geotechnical, M&E, accredited checking, project management and specialist services. From rail lines and community landmarks to healthcare, industrial and sustainable developments, ECAS delivers infrastructure built with precision and purpose that quietly supports millions every day.

## CORE CAPABILITIES



- Bridge and Road Engineering
- Building Engineering
- Civil Engineering
- Environmental Engineering
- Geotechnical Engineering
- Infrastructure Engineering
- Mechanical Engineering
- Rail Engineering
- Structural Engineering
- Traffic Planning
- Tunnel Engineering
- Urban Public Transportation Engineering

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## SPECIALTY SERVICES



- Design Consultancy Services
- Construction Management
- Design Review
- Assessment and Inspection
- Building Information Modelling (BIM)
- Design for Safety (DfS)
- Project Management



ACROSS EVERY DISCIPLINE,  
**AT EVERY  
STAGE**

Our strength lies in the breadth and depth of what we do. As a multidisciplinary consultancy, we operate across the full spectrum of engineering, from early-stage planning and land preparation to infrastructure systems and the built environments people ultimately call home. This integrated capability allows us to approach each project holistically, delivering solutions that are coordinated, thoughtfully planned and built for the long term.



## BUILDING BAYSHORE: A COMPLETE CONTINUUM OF ENGINEERING

**Three distinct projects, across different scopes, timelines and authorities, converging at one place and entrusted to one consultant.** At Bayshore, our diverse capabilities are realised across every stage of transformation, from underground infrastructure to surface systems and ultimately the homes and spaces people will inhabit, demonstrating both the range of what we do and the confidence placed in us to deliver at every stage.

### **Underground infrastructure**

We were appointed as Qualified Person (Supervision) for the Thomson-East Coast Line from Bayshore to Sungei Bedok, overseeing complex underground works within Singapore's transport network.

### **Land preparation and infrastructure**

We designed the roads, drainage and sewer systems that prepared the site for development, transforming it into a ready platform to support future growth and community building.

### **Homes and community spaces**

We were also entrusted with the design of public BTO housing and park spaces, shaping environments where people live, gather and connect.



BUILT ON PRINCIPLES,  
**GUIDED BY  
CONVICTION**

At ECAS, engineering is more than a profession. It's a promise. Our vision, mission, and core values are not words on a wall, but the code that governs how we think, act, and build. They are embedded in every drawing reviewed, every structure checked, and every decision made in the field.

**VISION**

We strive to be the leading multidisciplinary engineering firm in our region.

**MISSION**

To deliver innovative engineering solutions, develop strong client relationships, and be the leader in the development of our region. We achieve this through a client focused approach, continuous knowledge cultivation and contribution, and preservation of high industry standards.

**CORE VALUES****ECAS**

**E**xcellence | **C**ommitment | **A**ssurance | **S**afety

# MIND OF A VISIONARY

## HEART OF AN ENGINEER

At the helm of ECAS stands a team of true-blood engineers. Pragmatic visionaries who build not for accolades, but for impact and endurance. Each brings a distinct discipline, a steady hand, and a shared belief that great engineering shapes not just structures, but the lives they support.

**Er. Chan Ewe Jin**  
Managing Director



**Er. Leong Boon Cheng**  
Director



**Er. Tay Thiam Yeow, Titus**  
Director



**Er. Ng Shu Wei, Sharron**  
Director



**Er. Cecil Chua**  
Director



**Dr. Er. Shen Wei Yue**  
Director



**Er. Liu Yujun**  
Director

# THE PEOPLE

## BEHIND THE ENGINEERING

Every blueprint needs more than lines and logic. It needs people who care enough to get it right. Our strength lies in the diversity of our team, where engineers, specialists, project managers and support professionals from different disciplines and backgrounds come together with one shared purpose: to build with integrity, creativity, and precision.

### Strength in diversity, the ECAS way



**200+**

total dedicated staff across  
Singapore and Asia



**30 years**

of average  
leadership experience



**100+**

professional engineers,  
accredited checkers, and  
technical specialists



**1 shared  
mission:**

to engineer  
what endures

# MILESTONES

THAT BUILT OUR PATH

1996

- Founded by Mr. Chan Ewe Jin and a small team of engineers

2017

- Achieved Singapore Quality Class (SQC) certification
- Signed the BCA Better Workplace Pledge

**SQC certification: An unmistakable mark of all-round quality**

In 2017, ECAS was awarded the prestigious Singapore Quality Class, a national benchmark reserved for organisations with strong fundamentals and proven performance.



2016

- Marked 20 years with a refreshed corporate identity
- Ranked 15th largest engineering firm by Singapore Business Review
- Company re-branded to ECAS Consultants Pte Ltd

2018

- Named among Singapore's top enterprises in the Enterprise 50 Awards
- Ranked 14th largest engineering firm by Singapore Business Review
- Established Innovation Research Unit to strengthen R&D
- Expanded into infrastructure works with the Housing & Development Board (HDB)



## 2019 - 2020

- Staff strength exceeded 180 employees

### Advancing construction through integrated innovation

Adopted modern methodologies including IDD, DfMA, PPVC, APCS to stay ahead of the innovation curve.



## 2025

- Delivered early projects including Singapore's Aviation Substation and Metta School under CORENET X digital regulatory framework
- Strengthened talent over the years through national skills frameworks and structured professional development pathways

### Strengthening talent

Leveraged HCDT and the Built Environment Skills Framework to strengthen career development and succession pathways, and received the LEA Award. ECAS also supported national talent initiatives through participation in the SgIS programme.



\*HCDT: Human Capital Diagnostic Tool  
LEA: Learning Enterprise Alliance  
SgIS: Singapore Industry Scholarship

## 2021 - 2024

- Strengthened focus on sustainable design with Structural Steel, MET, AMA, BIM-CORENET X & IPD technologies
- Enhanced site productivity and coordination through remote supervision technologies



## 2026

- Celebrated 30 years as one of Singapore's leading multidisciplinary consultancies with over 200 staff
- Advanced workflow digitisation for site inspection, QAQC and ISO documentation
- Integrated AI-enabled workflows to enhance productivity and future-ready engineering operations

**East**

220 projects

**North**

145 projects

**Central**

157 projects

**West**

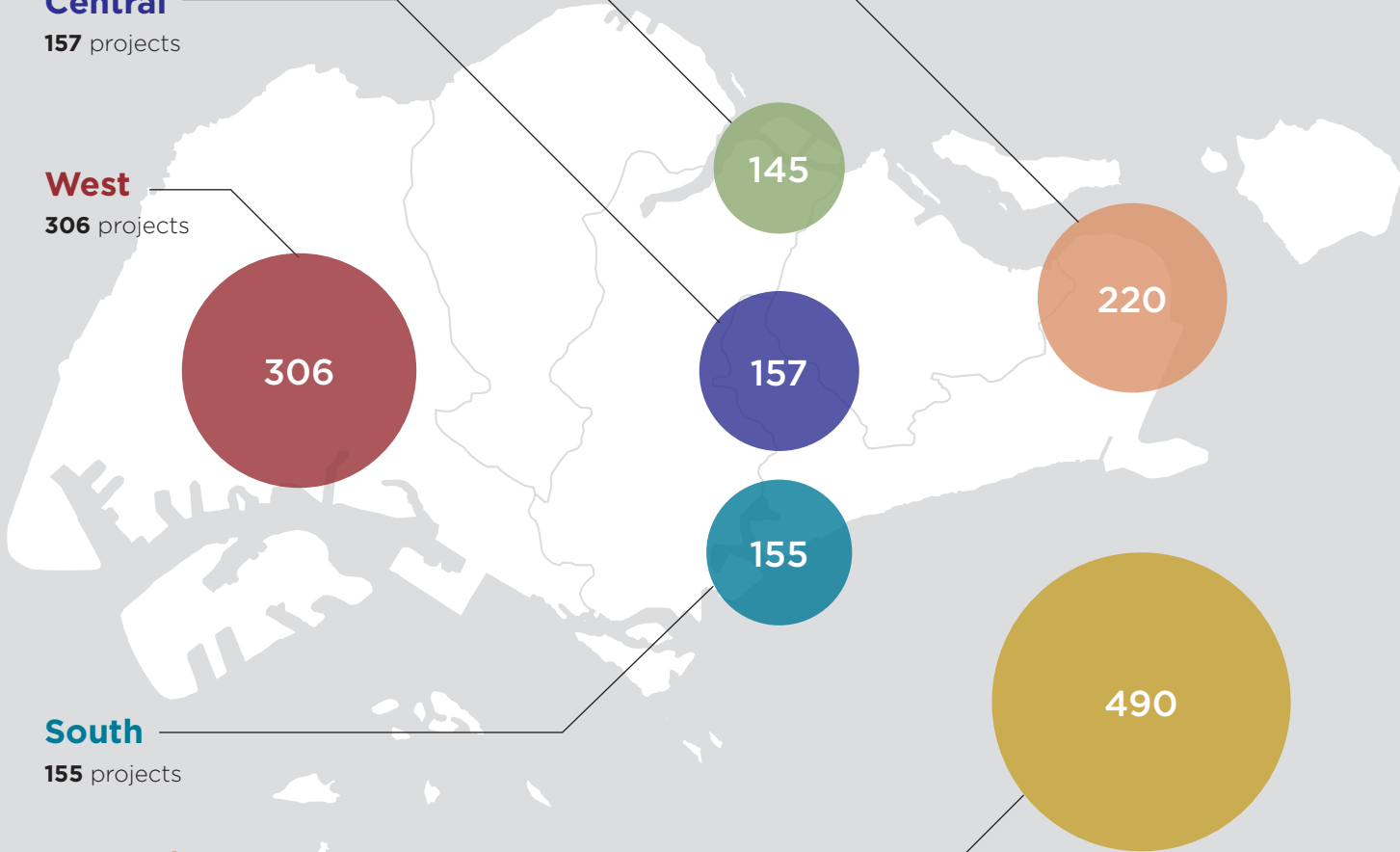
306 projects

**South**

155 projects

**Others/General**

490 projects



# SHAPING SINGAPORE, AND BEYOND

From expressways to rail lines, high-rises to hospitals, ECAS's footprint stretches across Singapore's landscape, forming a network of projects that move people, power cities, and strengthen everyday life. Our work is woven into the nation's growth, from its skyline to its foundations underground.

**Hotel:**  
36 projects

**Commercial:**  
143 projects

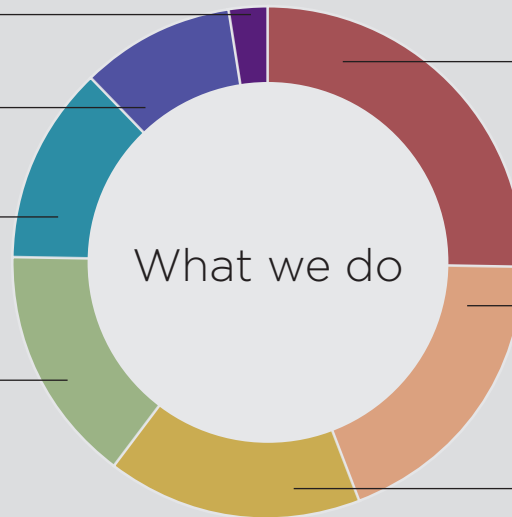
**Amenities & Others:**  
183 projects

**Institutional (Combined):**  
220 projects

**Industrial:**  
373 projects

**Residential:**  
280 projects

**Civil / Infrastructure:**  
238 projects



**1,254**  
Completed Projects



**219**  
Active Projects

# OUR KEY PROJECTS





# Building & Construction Authority Campus



**Client:**  
BCA



**Completed:**  
2022



**Value:**  
S\$80 million

## **Integrated planning & delivery**

- Adopted Integrated Project Delivery (IPD) and Integrated Digital Delivery (IDD)
- Multidisciplinary coordination across structure, architecture and MEP
- Digital workflows enabled precision planning and constructability

## **Advanced construction technologies**

- 16-storey building utilising APCS and PPVC systems
- PPVC implemented from level 1 to 16 for toilet and from level 12 to 16 for office with wet-joint connections
- Precast walls, columns, beams and wide hollow core slab forming primary structure
- Modular MEP integrated for productivity and quality control

## **Sustainable structural innovation**

- 7-storey Mass Engineered Timber (MET) building with hybrid steel elements
- CLT floor panels with concrete topping supported by glulam beams
- Glulam roof rafters spanning up to 30 metres
- Designed as Zero Energy (ZEB) and Super Low Energy (SLEB) building

## **Industry recognition**

- IES Prestigious Engineering Achievement Award
- SIA Architectural Design Awards 2024, Merit Award
- IStructE Singapore Structural Awards 2024, Winner for Zero Carbon Ambition Structures
- Design and Engineering Safety Award 2024

# Marina Coastal Expressway

**Client:**

Land Transport Authority

**Completed:**

2013

**Value:**

S\$305 million

**Project highlights**

- Singapore's first and longest undersea road tunnel
- 420-metre tunnel section constructed beneath seabed marine clay
- Critical east-west expressway link through Marina Bay

**Engineering & delivery**

- Appointed Qualified Person (Supervision) for construction works
- Ensured compliance with stringent safety and quality requirements

**Coordination & excellence**

- Close coordination with multiple government agencies
- Delivered within a highly constrained urban and marine environment
- Recognised for engineering excellence and construction safety





# Adult disability home at Pasir Ris

**Client:**

Ministry of Social and  
Family Development

**Completed:**

2022

**Value:**

S\$38.9 million

**Project Scope**

- 7-storey institutional care facility
- New road

**Advanced construction & digital delivery**

- Hybrid Prefabricated Prefinished Volumetric Construction (Hybrid PPVC) – deployed through repeating 4 standardised modules for the irregular room floor-plate – a first in Singapore
- ECAS PPVC connections
- Standardised structural steel modules with drop-and-lock connections for other column-free areas
- Coordination to align multidisciplinary designs, through BIM and VDC from ground up
- Digital workflows for precision planning and construction

**Site & infrastructure works**

- New access road (Pasir Ris Street 21) between development and Pasir Ris Drive 3

**Industry recognition**

- IStructE Singapore Structural Awards 2022, Merit Award for Construction Innovation

# Mandai Rainforest Park North (Mandai Wildlife Reserve)

**Client:**

China Jingye Eng.  
Corporation Ltd (S)

**Completed:**

2024

**Value:**

S\$246 million

**Project scope**

- 13-hectare adventure-based zoological park
- Immersive rainforest experience
- 220-metre cavern inspired by Sarawak's Mulu Caves

**Built environment**

- Themed animal habitats with integrated adventure elements
- Education centre, F&B hubs and entrance facilities
- Elevated walkways connecting multi-level experiences

**Engineering contribution**

- Multidisciplinary consulting services across a complex natural terrain
- Careful integration of structures within sensitive ecological surroundings





# Cathedral of the Good Shepherd

**Client:**

Cathedral of the Good Shepherd

**Completed:**

2014

**Value:**

S\$30 million

**Project scope involving heritage conservation & preservation, and sensitive design integration**

- Additions and alterations to a gazetted National Monument at Queen Street, constructed in 1847
- Underpinning works to existing foundation in soft clays, to achieve subsidence control
- Careful repair and preservation works to the historic Cathedral and 2-storey Rectory
- New Basement Annex (Top-Down construction) within the protection zones of MRT East-West/Circle/North-South Lines
- New 3-storey Annex Building directly above the existing MRT North-South Line

**Industry recognition**

- URA Heritage Award 2017
- SIA Architectural Design Awards 2017, Merit Award

# Green Vines Tampines

**Client:**

Housing and  
Development Board

**Completed:**

2023

**Value:**

S\$201 million

**Project Scope**

- Public housing development comprising 11 residential blocks (8 to 14 storeys) with 1,271 dwelling units, with roof gardens
- 3 separate basement car parks with green roof
- Precinct items such as pavilions, drop-off porches, linkways, etc

**Advanced construction & digital delivery**

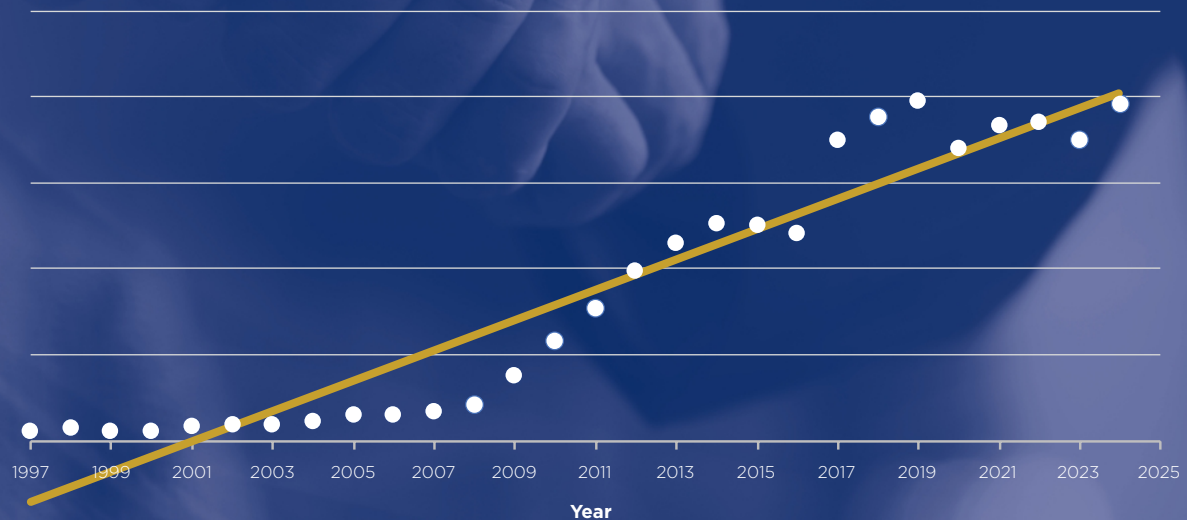
- Semi-precast construction with precast columns, walls, beams, slabs, household shelters, PBU, staircases, textured facades, roof features, ducts, parapets, etc
- Coordination to align multidisciplinary designs, through BIM and VDC from ground up
- Digital workflows for precision planning and construction



# A BUSINESS BUILT ON TRUST

Over the years, ECAS has maintained consistent performance through prudent governance, long-term client relationships and the ability to deliver complex, multi-faceted projects reliably. These results are not an end in themselves, but a reflection of how we work – carefully, responsibly and with a long-term view. Financial resilience enables us to invest in our people, our capabilities and the standards that define our profession.

Revenue



# FROM INNOVATION **TO IMPACT**

We continue to advance the Built Environment sector through the applied use of construction technologies, digital processes and sustainable materials. Our approach is grounded in practice, focused on improving buildability, coordination and long-term performance across the diverse projects we deliver.

Across our portfolio, we have implemented systems such as Advanced Precast Concrete Systems (APCS), steel-concrete hybrid structures and Mass Engineered Timber (MET). These have been delivered in projects including BCA Academy, Chin Cheng Nursing Home, Fernvale Community Club, PERI schools and HDB developments. We have also executed full structural steel solutions for projects such as Punggol Fire Station and the Aviation Substation, while adopting sustainable materials including Green Steel and Low Carbon Green Mix Concrete to support more environmentally responsible outcomes.

We have embraced evolving regulatory and digital processes, including early participation in CORENET X through projects such as the Aviation Substation and Maitri School. Building Information Modelling remains central to how we work, supporting coordination from design through to implementation. Looking ahead, we continue to invest in productivity-driven innovation, including exploring the conversion of BIM models into analytical models for structural design, and developing digital tools to streamline inspection and reporting workflows.

# ELEVATING OUR TALENT POOL

At ECAS, our work extends beyond infrastructure. We are equally committed to building people and nurturing talent. Through structured initiatives, partnerships, and continuous learning, we strengthen the resilience of the engineering sector while creating meaningful impact for society.

## **Our talent and workforce commitments**

- Leveraged the Human Capital Diagnostic Tool (HCDT) to drive data-informed human capital decisions.
- To strengthen career progression and succession planning, ECAS contextualised the Built Environment Skills Framework and developed comprehensive frameworks for Competency, Career Development, and Talent Management & Succession Planning. These efforts were recognised with a Learning Enterprise Alliance (LEA) Award by the Institute for Adult Learning (IAL).
- Supported leadership development through participation in the Built Environment Young Leaders' Programme (YLP), part of BCA's (Building and Construction Authority) BuildSG LEAD (Leadership Engagement and Development) Framework.
- Supported engineers through training initiatives such as knowledge-sharing sessions on various projects, software, and guidance for the Professional Engineer (PE) Examination, as well as providing sponsorship for master's programmes.
- Expanded the implementation of the Electronic Performance Appraisal System to additional regional entities over the years, aligning with local practices to strengthen staff performance and development.

## **Investing in continuous growth and well-being**

- The ECAS Welfare Committee brings staff together through a variety of engaging outdoor and indoor activities throughout the year, complementing our annual overseas retreat and annual dinners, creating shared memories for the ECAS family.
- In partnership with the Health Promotion Board (HPB), ECAS has conducted a range of employee wellness initiatives, fostering health and well-being.



# THE HONOUR IS IN THE WORK

Every award is an honour, but the real achievement lies in delivering work that stands the test of time. Our proudest moments are not at ceremonies, but on the ground, when infrastructure works, communities thrive, and trust is built, one project at a time.





# ENGINEERING THAT **GIVES BACK**

We believe engineering is more than about blueprints and buildings. It is about building people as well. Through our commitment to education and talent development, progress becomes meaningful when it uplifts others.

## **Our CSR initiatives**

- Actively contributed expertise to key industry bodies such as Institution of Engineers (IES), and Professional Engineers Board (PEB).
- Contributed to the BCA taskforce on talent pipeline, business sustainability, and industry transformation, with a graphic book on these initiatives launched by Co-Chair Minister Indranee Rajah.
- Provided scholarship opportunities as a sponsoring organisation for the Singapore Industry Scholarship (SgIS) in collaboration with the Ministry of Education (MOE).
- A participating firm in the BuildSG Enhanced Internship Programme (INSPIRE).
- Offered internship opportunities in collaboration with universities, polytechnics and BCA Academy's Integrated Work-Study Diploma (IWSD) programme to prepare the next generation of professionals.
- Sponsored various basic and master's programmes in partnership with BCA to support talent development within the sector.
- Provided employment opportunities for fresh graduates to nurture new talents and contribute to workforce growth.



### The ECAS Bursary at NUS: Nurturing future engineers



As part of our commitment to education and social mobility, we have contributed to the bursary and funds of the College of Design and Engineering, National University of Singapore. These contributions support financially needy undergraduates and help advance the College's educational mission. In recognition of our support, the College has featured ECAS on both its physical and virtual "Our Circle of Patrons" commemorative donor wall.

# SHAPING TOMORROW, ONE DESIGN AT A TIME

As Singapore continues to grow upward, outward and underground, ECAS looks ahead with a steady purpose, to keep engineering what endures. The firm's next chapter focuses on smarter, greener, and more connected infrastructure powered by digital transformation, sustainability and regional collaboration. By investing in BIM, DfMA and emerging design technologies, ECAS continues to refine the way cities are built and maintained.

Beyond technology, the future is also human. ECAS remains committed to nurturing the next generation of engineers, empowering them with knowledge, mentorship and purpose. The goal is not just to build the next project, but to help build the next era, one where every structure designed today supports a better world tomorrow. To ECAS40, 50, and beyond. Together.



# PARTNERSHIPS THAT ENDURE

Behind every successful project is a partnership grounded in trust. Over the years, ECAS has worked alongside government agencies, developers, architects and contractors across Singapore and the region. These long-standing relationships reflect a shared commitment to quality, reliability and projects delivered well.

## Our clients from public sectors







The image features a background of a blue-tinted architectural structure with a strong sense of perspective. The structure is composed of numerous parallel, slightly curved lines that create a series of overlapping, rectangular frames that recede into the distance, forming a tunnel-like effect. The lines are dark blue, and the overall color palette is monochromatic. In the center of the image, the letters "ECAS" are displayed in a bold, white, sans-serif font. The text is enclosed within a thin white rectangular border, which stands out against the dark blue background.