TEDI | LONDON
The Engineering
& Design Institute

Engineered by:
- Arizona State University
- King's College London
- UNSW Sydney

STRATEGIC PLAN
2020-2025 | PHASE 1

INTRODUCTION

The Engineering & Design Institute London (TEDI-London) was born from a vision by our founding partners: Arizona State University, King's College London and the University of New South Wales, to address the critical undersupply of engineers and enhance the quality of engineering graduates with the right mix of technical and, crucially, social and contextual skills to tackle global challenges and help change people's lives. Targeting a more diverse cohort of students than traditional engineering degrees, TEDI-London aims to attract and empower socially aware and globally focussed engineers through its innovative, industry informed and project-based curriculum.

Our Business Plan has long-term aspirations to grow TEDI-London's total student cohort to over 5000 and to develop a new teaching model that is scalable nationally and internationally to positively influence engineering education delivery in our founding partners' provision and across the sector.

This 2020-2025 Strategic Plan has been developed to set us on a course to achieve these long-term aims, by providing goals and objectives for TEDI-London's first five years of operation and to test the feasibility of our innovative curriculum model within this period. The Strategic Plan has been proudly developed in consultation with our staff and our stakeholders and will be regularly monitored and reviewed. Our Strategic Plan is underpinned by a set of KPIs which will enable us to measure progress, celebrate successes and refocus our effort where required.

We are embarking on an exciting journey to extend participation in engineering, to increase the pipeline of engineering graduates which is sorely needed. This will enable us to transform engineering education in order to transform lives. This Strategic Plan, together with our sub-strategies and operational planning, provides us with a roadmap to achieve this vision.

Professor Judy Raper
Dean and CEO

OVERVIEW

OUR VISION:

Transforming engineering education to transform lives – both for students and for the users of the products they design and make.

OUR MISSION:

To attract and empower individuals and partners from diverse backgrounds and perspectives to develop the skills and confidence to create practical real-world solutions that advance how we live as a global community.

OUR VALUES:

We always aim to be inclusive, courageous, inspiring and collaborative and to work with integrity.

OUR GOALS AND OBJECTIVES:

GOAL 1
We are changing lives through impactful and student-focussed learning

We will do this by:

Objective 1A
Broadening participation in Engineering Higher Education

We harness the 'power of diversity' in our students and staff to engineer creative solutions to real-world problems.

Objective 1B
Student-led learning by design

Students are at the heart of everything we do. We empower our students with self-directed, technology-enhanced learning. Our students are coached by our academic educators, guided by industry professionals and enriched by their peers.

Objective 1C
Project-based learning: co-created and co-delivered with industry

Our curriculum is project-based, with students developing solutions to real-world problems. Our curriculum is co-delivered by industry, partners and educators and is underpinned by our learning tree.

GOAL 2
We are engineering solutions for our global future

We will do this by:

Objective 2A
Upholding a global focus

We will work with our global partners, staff and students to expand our knowledge and creativity and instil an open and outward-looking mindset.
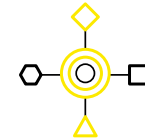
Objective 2B
Future oriented engineering solutions that make a difference

We will equip our engineers to solve complex, real-world problems, utilising creativity and technology to make genuine change that improves the lives of individuals and communities.

Objective 2C
Working with industry professionals to shape skills of the future workforce

We will prepare our graduates to be engineers who are equipped to create impactful solutions for the industries in which they work.

GOAL 3
We are enabling diverse and supportive environments for people to flourish

We will do this by:

Objective 3A
Creating an inclusive culture

We embrace diversity – of background, experience, culture and nationalities – enabling individual voices to be heard and valued.
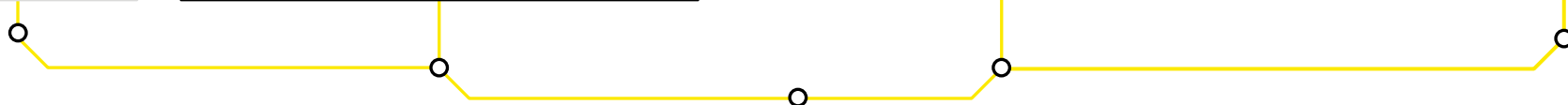
Objective 3B
Transforming our communities together

We will work within our communities to transform our local environment.

Objective 3C
Establishing smart and sustainable working and learning environments

We will create an environment which is accessible, sustainable and enables our people to maximise their performance.

1 CHANGING LIVES THROUGH IMPACTFUL AND STUDENT-FOCUSSED LEARNING

1A Broadening participation in Engineering Higher Education

We harness the 'power of diversity' in our students and staff to engineer creative solutions to complex, real-world problems.

To help address the global shortage of engineers and provide a diverse engineering workforce which will transform the discipline, we will attract capable students from non-traditional engineering backgrounds (particularly women and people from socioeconomic and cultural backgrounds who have not historically been drawn to engineering).

Initiatives:
— Through our staff and our communications and recruitment material and activities, we will seek to change the narrative and cultural context to promote the exciting realities of modern engineering, including its potential to make a difference.
— We will employ admissions criteria and processes which assess applicants by their attitude, aptitude and ability: the 3As. This will provide access to new, non-traditional kinds of students who will be professional engineers in training.
— We will offer scholarships providing a package of financial and targeted support measures for non-traditional engineering students.
— We will support all our students throughout their time at TEDI-London, providing mentorship, resources and guidance tailored to individual needs to foster student success and strong retention rates.

KPI Measures:
— We have an ambitious target of achieving 50:50 gender balance in our student cohort by 2025.

By 2025, the targets in our Access and Participation Plan are that:
- 48% of our students will be from ethnic minority (BAME) backgrounds;
- 20% of our students will be mature students (over 21 years of age); and
- 35% of our students will be from low-participation backgrounds (POLAR quintiles 1 and 2).
- We aim for at least an 85% retention rates for each student cohort targeted above.

1B Student-led learning by design

Students are at the heart of everything we do. We empower our students with self-directed, technology-enhanced learning. Our students are coached by our academic educators, guided by industry professionals and enriched by their peers.

We will establish a learning culture in which students are trusted and empowered, and where educators are coaches. Our student-led, immersive pedagogy will impart core engineering content through scenario-based learning, complemented by our interactive learning tree, allowing our professionals-in-training to engage in self-directed learning, connecting with modules as they need them and learning at their own pace. Our curriculum will feature strong design and entrepreneurship skillsets, giving students the skills to solve complex contemporary challenges. The curriculum will be unique with flexibility according to student needs.

Initiatives:
— We will harness the expertise of our founding partners in developing our curriculum, our online learning, coaching and evaluation methods.
— Feedback from our students will inform our curriculum development and delivery.
— We will recruit for and develop the skills and capability within our staff to enable student-led learning.
— We will test the success of our curriculum over the life of this Strategic Plan.
— All our programmes will feature projects aimed at challenging our students to solve real-world problems.
— Our curriculum will feature accelerated pathways and will offer accreditation through the Institution of Engineering Technology (IET) and Institution of Engineering Design (IED).

KPI Measures:
— 90% student satisfaction *(Source: Annual internal student pulse survey).*
— 85% first year to final-year student retention rate *(Source: Student Records System).*
— Student attainment above wider engineering sector *(Source: HESA – HEIDI).*

1C Project-based learning: co-created and co-delivered with industry

Our curriculum is project-based, with students developing solutions to real-world problems. Our curriculum is co-delivered by industry, partners and educators and is underpinned by our learning tree.

Industry will have a key role in the design and delivery of our programmes. Flexible delivery will include opportunities for accelerated degrees. By making things in project teams throughout their programme, our graduates will be more able to tackle hands-on, complex, multi-disciplinary challenges than current engineering graduates. Industry partners will be invited to help co-design projects and be involved with coaching and mentoring to ensure the professionals in training have real world experience.
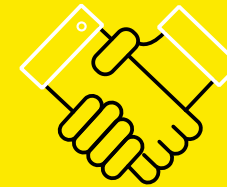
80% of projects to have industry / partner involvement

Initiatives:
— Over the life of the Strategic Plan, our Learning Tree will develop, providing a library of interactive content that students can access as they need it.
— With our industry and community partners we will embed project-based learning throughout our curriculum.
— We will explore flexible delivery options that meet student and industry needs (eg accelerated learning).
— Our staff development will ensure that industry needs and commercial awareness are understood and seen as integral to role delivery.

KPI Measures:
— 80% of our projects will be developed with industry / partner involvement *(Source: Internal Project Reporting).*
— Sustainable growth of accelerated programme by 2025 *(Source: Student Records System).*

2 ENGINEERING SOLUTIONS FOR OUR GLOBAL FUTURE

2A Upholding a global focus

We will work with our global partners, staff and students to expand our knowledge and creativity and instil an open and outward-looking mindset.

Research shows that diversity within teams brings the most creative and effective solutions. TEDI-London aims to provide a global student experience in which UK students will work closely with international students, educators and partners and within a curriculum jointly designed and supported by our industry partners and our three international founding universities.

Initiatives:
- Our programmes will demonstrate global perspective by featuring a variety of international educators, mentors and students to enhance creativity and an outward-looking, open approach.
- Our projects will address global engineering challenges (eg Environmental Sustainability, Designing Smart Cities)
- Our staff will have a global perspective and will adopt best practice, informed by the experience of our founding partners.

KPI Measures:
- 40% of our students to be international *(Source: Internal Student Record System Reports).*
- At least 20 students in our summer schools each year will be from our founding partner institutions *(Source: Internal Student Record System Reports).*

2B Future oriented engineering solutions that make a difference

We will equip our engineers to solve complex, real-world problems, utilising creativity and technology to make genuine change that improves the lives of individuals and communities.

Our curriculum will develop core engineering knowledge alongside skills in communication, entrepreneurship and project management. This unique approach, will be technology-enhanced and embedded through project-based learning so that our students and graduates will be able to tackle hands-on, complex, multi-disciplinary challenges. Our projects will address real-world challenges for local, national and global communities, attracting a wider range of students and providing solutions that will have a genuine impact.

Initiatives:
- Work with our partners, industry and pioneering engineering academics to identify, design and implement projects with our students that address global and community challenges.
- Utilise new and emerging technologies in our learning environment to enable knowledge acquisition and underpin the development of creative solutions.

KPI Measure:
- ≥50% of our student projects to have significant impact *(Source: External survey of our industry and community project partners).*

2C Working with industry professionals to shape skills of the future workforce

We will prepare our graduates to be engineers who are equipped to create impactful solutions for the industries in which they work.
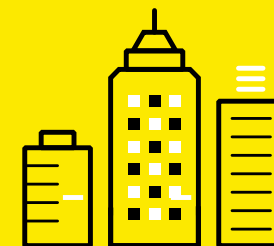
In the UK alone, an estimated additional 20,000 engineers a year are needed to respond to a digitally driven and data-enabled economy. Through offering academically rigorous yet practical, project-based programmes, our continuously evolving curriculum will provide work-relevant, user-focussed and outcome-centred graduates to meet industry needs. This model is mutually beneficial as our professionals in training will have access to industry mentors who can provide good advice about tackling the job market and industry will have immediate access to talented graduates who are problem solvers, team players, effective communicators, technically adept, practical designers, socially conscious, globally experienced, industry ready and entrepreneurial.

Initiatives:
- Continuous engagement with industry through curriculum development workshops and via the high-level Industry Strategic Advisory Board to ensure industry is informing our programme development and shaping our future graduates.
- Liaise with government, not-for-profit bodies and community groups to collaborate on solutions for emerging problems and to meet identified engineering skills needs.

KPI Measure:
- ≥85% graduate employment *(Source: DLHE Survey 6 months after graduation).*

40%
of students to
be international

POW! **≥50%**
of student projects
to have significant
impact

≥85%
graduate
employment

3 WE ARE ENABLING DIVERSE AND SUPPORTIVE ENVIRONMENTS FOR PEOPLE TO FLOURISH

3A Creating an inclusive culture

We embrace diversity – of background, experience, culture and nationalities. We enable individual voices to be heard and valued.

Research shows that improving diversity produces positive outcomes. As well as actively seeking and promoting a diverse student cohort, we are committed to diversity and inclusion amongst our staff at TEDI-London, not least because a variety of disciplines and backgrounds in our staff provide positive examples in our student cohort.

Initiatives:
— Train existing staff in unconscious bias and promote and implement diversity and inclusion in our policies, processes and decision-making, particularly regarding recruitment and selection, induction and staff development.
— Create and embed our learning and development toolkit, embracing a coaching ethos for our staff and students.
— Provide feedback mechanisms and opportunities so that the ideas and opinions of our students and staff can be shared and utilised to enrich our operations and outputs.
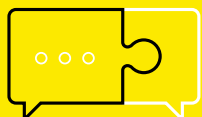
KPI Measure:
— 25% staff members from ethnic minority (BAME) backgrounds *(Source: Internal staff self-reporting).*
— 80% positive staff engagement (*Source: Annual internal staff pulse survey*).
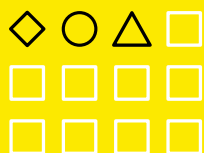
25%
staff from ethnic minority backgrounds

80%
positive staff engagement

3B Transforming and our communities together

We will work with our communities to transform our local environment.

TEDI-London is proud to be a new higher education provider in the heart of London. In partnership with British Land, as a flagship tenant of the Canada Water redevelopment, we are excited to work within our community to improve access to higher education and to enhance the local environment and economy. As part of our aim to bring non-traditional students into engineering education, we will work to attract students from our local area. We will also work in partnership with our community, through student project work and staff community initiatives to enhance our local environment for the benefit of all.

Initiatives:
— Through our partnerships with industry and community groups, our staff and students will be involved in projects and initiatives benefitting the local area through student projects that work to benefit our local environment and citizens, partnerships with local industries and businesses and staff community engagement activities.

KPI Measure:
— 20% local students (Southwark and South & East London) *(Source: Internal Student Records System).*

20%
local students

3C Establishing smart and sustainable working and learning environments

We will create an environment which is accessible, sustainable and enables our people to maximise their performance.

We will provide a supportive and diverse campus environment for our staff, student and partners which is personalised and proactive and which enables them to be self-directed in their activities. We are digital by design and aim for paperless operations for the majority of our activities. Financial sustainability is crucial to the fulfilment of our goals and objectives.

85%
Student / staff satisfaction with facilities and support

Initiatives:
— Embed the UN Sustainability Goals into our curriculum and partnerships.
— Design our facilities to incorporate engagement spaces, maker-spaces for project work and industry spaces where companies can send engineers and technologists to work with our student teams on real-world projects.
— Develop IT and business systems that are innovative, adaptable and user-friendly to enhance our operations.
— Explore and embed service models produced in partnership with our stakeholders.
— In the context of our vision and mission, explore new revenue streams and inform our operations with flexible financial modelling.

KPI Measures:
— 85% Student / staff satisfaction with facilities *(Source: Staff and Student annual internal surveys).*
— 85% Student / staff satisfaction with support provision *(Source: Staff and Student annual internal surveys).*
— TEDI London student number target of 400 by 2024/25.
— 25% year on year reduction in net deficit.

COLLATED TEDI-LONDON KPIS

GOAL 1 ▶ We are changing lives through impactful and student-focussed learning

OBJECTIVE	KPI	TARGET BY 2025	UPDATED
1A Broadening participation in Engineering Higher Education	**STUDENT DIVERSITY**		
	% Female engineering students	50%	Annually
	% Ethnic minority students (BAME)	48% (as per APP)	Annually
	% Mature students	20% (as per APP)	Annually
	% Low-participation students (POLAR4 quintile 1 and 2)	35% (as per APP)	Annually
	% Student retention rates by cohort	85%	Annually
1B Student-led learning by design	**STUDENT SATISFACTION / ENGAGEMENT WITH LEARNING**		
	% Student satisfaction generally: student survey	90%	Annually
	% First year to final-year student retention rate	85%	Annually from 2024
	Student attainment compared with wider engineering sector	Attainment above sector average	Annually from 2024
1C Project-based learning: co-created and co-delivered with industry	**INDUSTRY ENGAGEMENT**		
	% Projects with industry / partner involvement	80%	Annually
	Sustainable growth of accelerated programme	5% year on year growth from launch	Annually from 2022

GOAL 2 ▶ We are engineering solutions for our global future

OBJECTIVE	KPI	TARGET BY 2025	UPDATED
2A Upholding a global focus	**INTERNATIONALISATION**		
	% International student numbers	40%	Annually
	International Engagement through founding partners	≥20 students from founding partners in each year's summer school	Annually
2B Future oriented engineering solutions that make a difference	**IMPACT**		
	No. of impactful projects (external survey)	≥50% projects to have impact	Annually
2C Working with industry to shape the skills of our future workforce	**GRADUATE OUTCOMES / EMPLOYABILITY (From Year 4)**		
	Employment rates (6 months after grad DLHE)	≥85% employment	Annually from 2025

GOAL 3 ▶ We are enabling diverse and supportive environments for people to flourish

OBJECTIVE	KPI	TARGET BY 2025	UPDATED
3A Creating an inclusive culture	**STAFF DIVERSITY AND ENGAGEMENT**		
	Staff diversity: % ethnic minority (BAME) staff	25%	Each mtg
	% Staff engagement: staff annual pulse survey	80%	Annually
3B Transforming our communities together	**COMMUNITY ENGAGEMENT**		
	% Local students v targets (Southwark and South & East London)	20%	Annually
3C Enabling diverse and supportive environments for people to flourish	**LEARNING / WORKING ENVIRONMENT**		
	% Student / staff satisfaction w/facilities	85%	Annually
	% Student / staff satisfaction w/support provision	85%	Annually
	FINANCIAL SUSTAINABILITY		
	TEDI-London student number target	400	Annually
	% Year on year reduction in net deficit	25%	Annually

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