SUMMER TIMES ISSUE 2

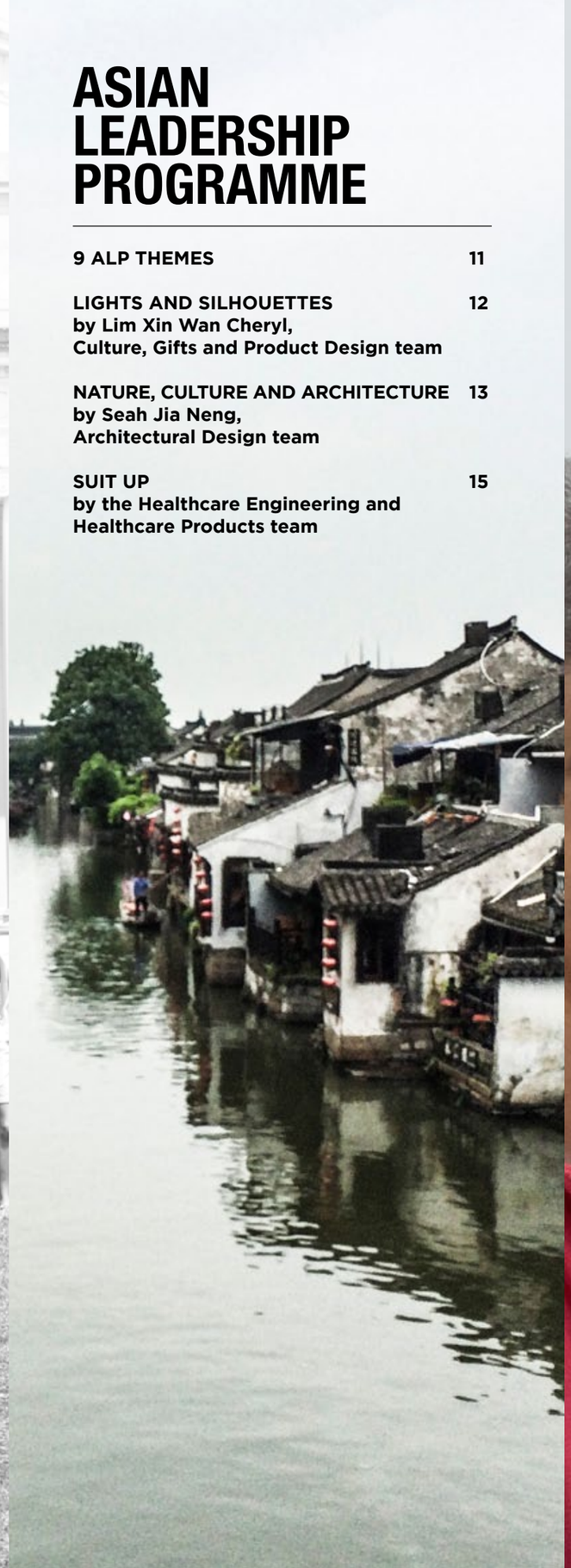
STUDENTS' RECOLLECTIONS
OF AN SUTD SUMMER
2014

SINGAPORE UNIVERSITY OF
TECHNOLOGY AND DESIGN
Established in collaboration with MIT

GLOBAL LEADERSHIP PROGRAMME

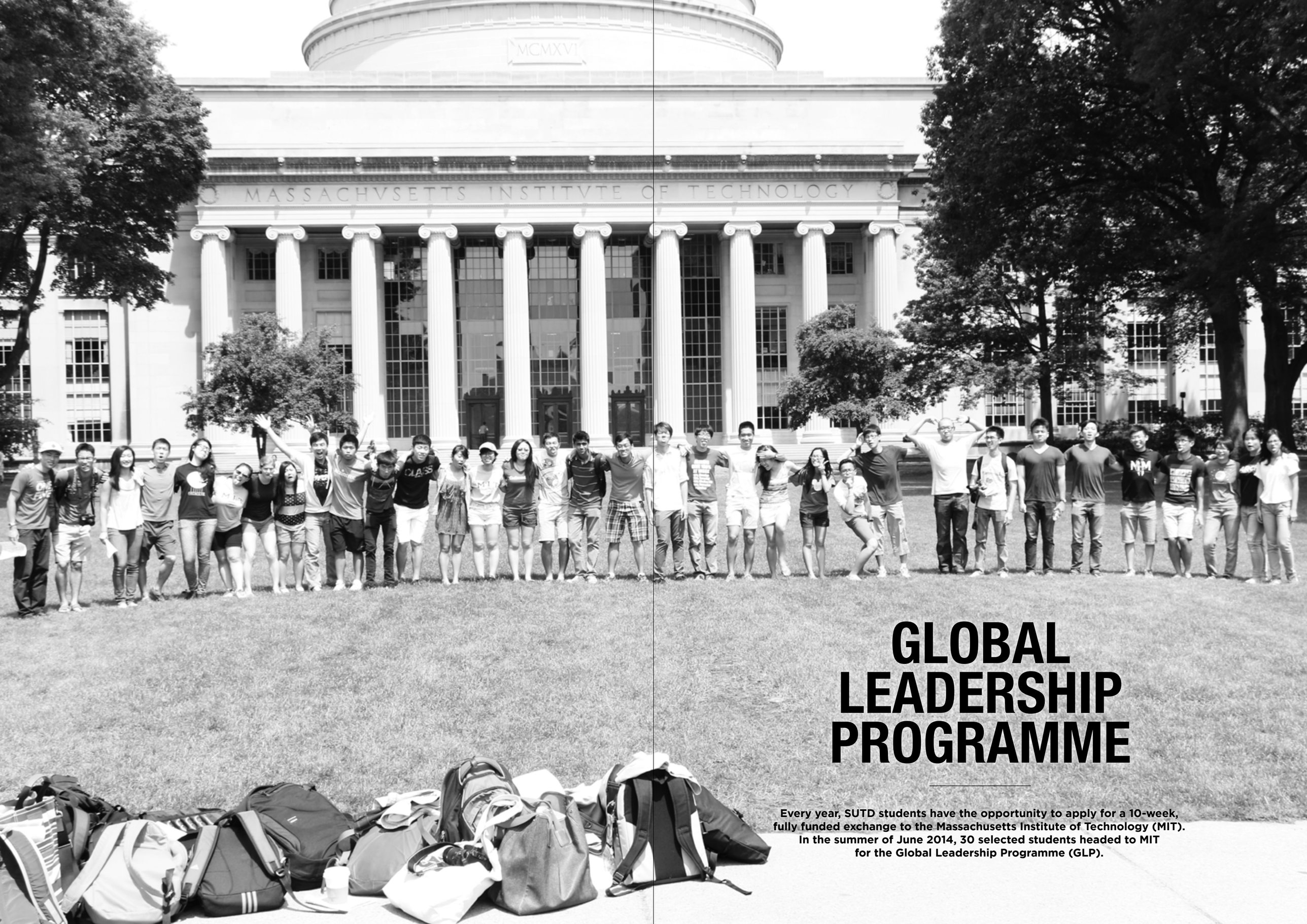
Cover image by Joanne Tan

ASIAN LEADERSHIP PROGRAMME



INTERNSHIPS

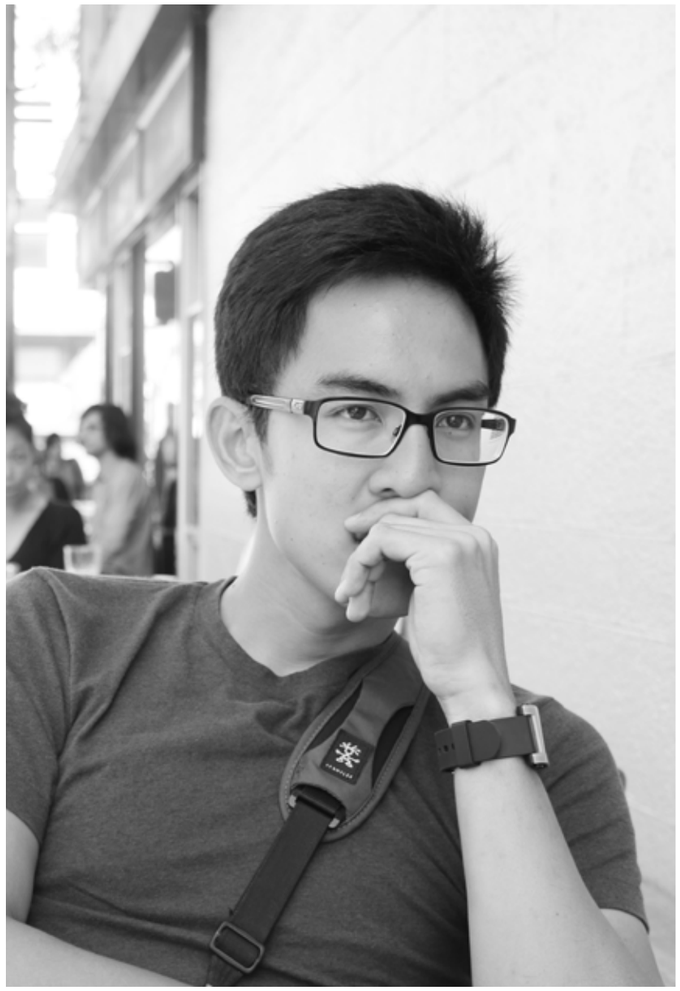
MORE THAN JUST AN ORDINARY SUMMER



GLOBAL LEADERSHIP PROGRAMME

Every year, SUTD students have the opportunity to apply for a 10-week, fully funded exchange to the Massachusetts Institute of Technology (MIT). In the summer of June 2014, 30 selected students headed to MIT for the Global Leadership Programme (GLP).

"THIS SUMMER WAS ONE THAT I WILL FOREVER HOLD CLOSE TO MY HEART."



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68 DAYS OF SUMMER

by Lau Hong Fai

This year, 30 of us headed to the States not knowing what to expect or what we would be doing in Boston for GLP. After the 68 days away, I dare say that we all returned home inspired, rejuvenated and ready to take on whatever life throws at us, for our horizons have been broadened and our understanding of ourselves deepened.

Here are just 7 things that made this summer unforgettable:

LEADING WITH INTEGRITY
24 hours and two plane rides later, we touched down in Boston. We headed straight to Camp Wonderland, in a quaint little town called Sharon, for LeaderShape – a 6-day motivational camp where we reflected on ourselves, our beliefs and how we wanted to change the world.

The camp gave us the opportunity to reflect on bigger things and laid the foundation for what was to come next.

'HOW'S IT GOING?'
This was a common greeting that brightened each day as we travelled through MIT in Boston and Cambridge, where we stayed. The open and friendly American culture was pleasant and admirable – something that we, Singaporeans can learn to embrace and adopt.

A WORLD BETTERED BY DESIGN
Every day, I was amazed by elements of technology and design that lined the streets of Boston. During a visit to WiTricity Corporation which specialises in wireless electricity, I was blown away by the futuristic prototypes! This was just one of the many company and cultural visits we had during our time in Boston.

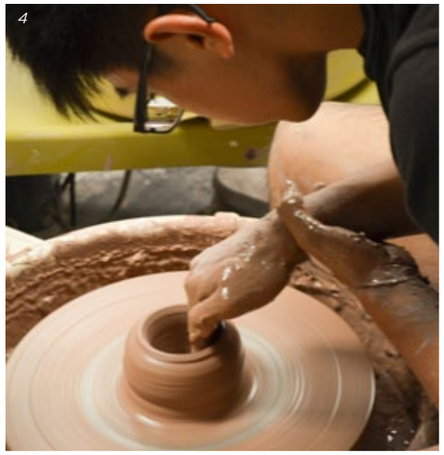

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Photo credits: Ivan Ting, Jezamine Chua

1. Travelling around the States
2. New York Skyline
3. EV Challenge
4. Ceramics
5. Architectural Drawing
6. Camp Wonderland
7. A Company Visit
8. The Facebook Headquarters

FINDING THE PICASSO IN ME
Some of the main activities at GLP were Architectural Drawing, Ceramics, the Electric Vehicle (EV) Challenge, Communications and Outdoor Education. I found Ceramics to be the most interesting as it was my first time handling clay on the wheel. We were introduced to 'artsy' concepts like form and emotion. Though it appeared simple to form a shape on the wheel, it took me an entire month to really get in tune with it.

DARE TO FAIL
The EV Challenge was the main focus of the programme. In groups of three, with a limited budget, we had to build an EV that complied with given rules and actually race with it.

As time passed, it was exciting to see different forms of EVs take shape. My group took a risk and attempted to build an EV that was capable of holonomic motion (the ability to go in any direction). Eventually, one of our motor controllers burnt out and we did not qualify for the race, but we were proud that it embodied America's spirit of innovation.

'HEY, ISN'T THAT MARK ZUCKERBERG?!'
One of the many weekend options was to travel. My buddies and I were lucky enough to get a guided tour through the Facebook Headquarters during our weekend trip to San Francisco, California, and yes! I saw Mark Zuckerberg with my own two eyes! It was enriching to experience what it means by America being a melting pot of different cultures and great ideas! One can see how the different states stack up against one another.

FROM FACES TO FRIENDS
The GLP experience was unforgettable because I had the company of many unique individuals. Just weeks ago, most of us were mere faces around the university to one another. These are friendships and memories that I will cherish for the rest of my life.

THE EV CHALLENGE: A GO KART STORY

by Yadunund Vijay

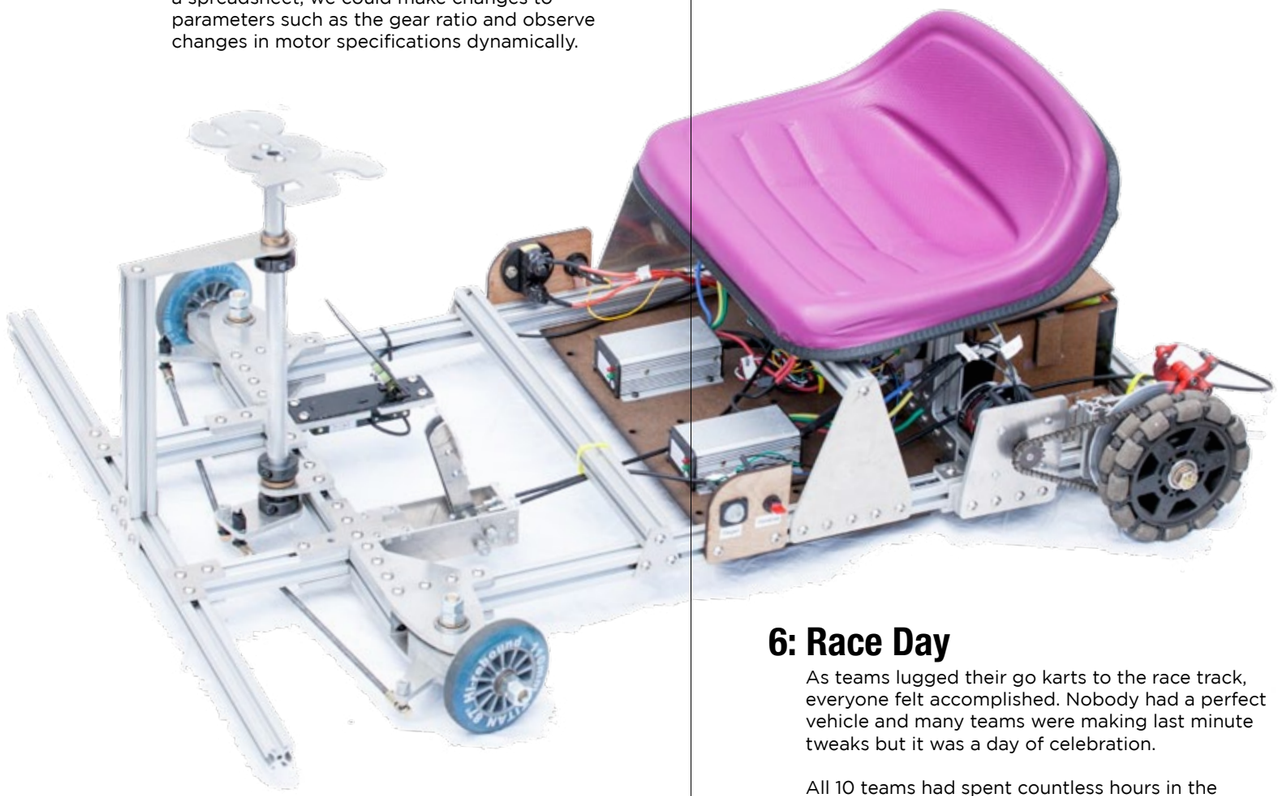
"It took my team 5 tries to get the motor mounts right, 4 tries to get the brake rotors right, 2 tries to get the brake pedal right and 3 tries to get the steering block right."

1: Preliminary Designs, Brainstorming & Sketching

After an extensive brainstorming session, my team ultimately agreed on building a four-wheeler go kart. By the end of the week, we had a fair idea of what our kart would look like and the systems it would need.

2: Motor & Drivetrain Analysis

After employing laws of Kinematics and others, crucial components were chosen. Using a spreadsheet, we could make changes to parameters such as the gear ratio and observe changes in motor specifications dynamically.



3: Components Selection and Software Modelling

Next, we had to decide on the parts needed for fabrication and assembly, and begin work on SolidWorks models. The instructors were always available if we needed help with deciding on parts or designing them.

4: Vehicle Fabrication

The familiar iterative design process played a pivotal role in converting our digital models into tangible racing vehicles. Teams went through multiple rounds of prototyping before finally settling on designs. Only once all the parts were satisfactory were they sent for water jet cutting.

Everyone scrambled to get their prototypes working. It took my team 5 tries to get the motor mounts right, 4 tries to get the brake rotors right, 2 tries to get the brake pedal right and 3 tries to get the steering block right.

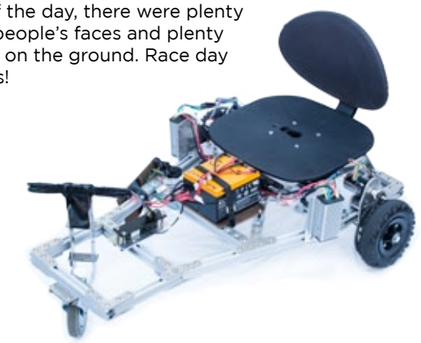
5: Mechanical and Electrical Inspections

The first goal was to have a go kart that could move without electric power, steer efficiently and brake smoothly to pass the 'Rolling Frame Inspection'. Once a kart passed the test, the next challenge was to figure out the wiring to power the vehicle. The workspace was not competitive but instead there was collaboration between teams, which is something I always admired about the SUTD spirit!

6: Race Day

As teams lugged their go karts to the race track, everyone felt accomplished. Nobody had a perfect vehicle and many teams were making last minute tweaks but it was a day of celebration.

All 10 teams had spent countless hours in the workshop breathing life into their designs. By the end of the day, there were plenty of smiles on people's faces and plenty of skid marks on the ground. Race day was a success!



7: Takeaways

All of us gained better understanding of the design process, developing new software and machining skills along the way. We also discovered ways to enhance mechanical assembly and design for versatility.

One of my biggest takeaways is learning to take risks and to not fear failure. We could have all built go karts by merely copying existing designs but instead, teams took risks and built unconventional go karts that may not even have worked. We all learnt from our mistakes and truly embraced the spirit of learning.

Aurelia Chan

Sia Chin Kiat

Lee Li Zhen

LESSON 1: SPEED SKETCH

To start, we were given the daunting task of drawing our surroundings within insanely short amounts of time – from 1 minute, to 30 seconds, to 15 seconds!

FROM DOODLES TO SKETCHES

by Jezamine Chua

LESSON 2: COMPOSITION AND NEGATIVE SPACES

We explored composition by experimenting with lines and boxes that broke up our drawing into differently sized and positioned sections. 'Negative spaces', 'spaces unoccupied by an object', were also new and unfamiliar to most of us.

LESSON 3: LINES

As our instructor said, "Use as few lines as possible to draw something complicated, and use as many lines as possible to draw something simple."

Zhang Ke Er

Tracy, MIT

LESSON 4: TONE

After sketching a gym ball that our instructor brought to class, and playing with the lightest and darkest powers of our 4B pencils, we headed out for a mini sketch-walk along the banks of the Charles River.

Kelly Kuo

LESSON 5: THE MIT DOME

LESSON 6: COMIC SKETCHING

Next, we were tasked to sit in front of YouTube and sketch our animated heroes.

Lena, MIT

Lau Hong Fai

LESSON 7: FISH IN A BASKET

Finally, we had to sketch the Ray and Maria Stata Center designed by award-winning architect Frank Gehry. Sketching a building had never been so confusing, so neckstraining, and yet so enjoyable!

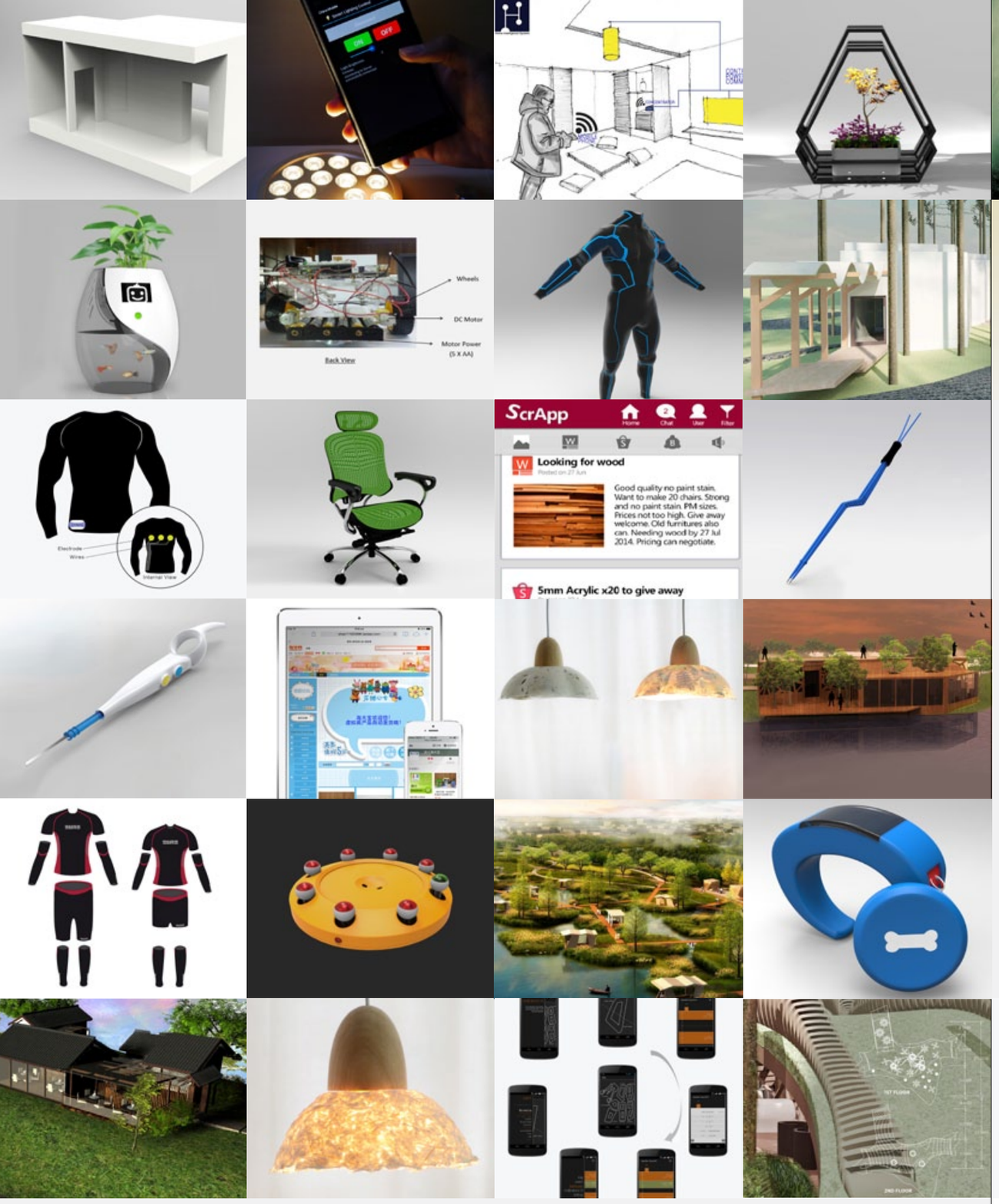
Chheangkea leng, MIT

In the land of burgers and fries, we discovered an amazing plethora of delicacies and desserts beyond our imagination. Here's a food trail you might want to go on!

by Rachel Lau

Photo Credits: Aurelia Chan, Ivan Ting, Rachel Lau, Jezamine Chua

You can start the day with a sumptuous breakfast at the **International House of Pancakes (IHOP)**. For lunch, you might consider dining at **Flour**, a local cafe with an interesting selection of sandwiches. Boston's **Chinatown** also offers many familiar Asian cuisines such as *dim sum* and *bak kut teh*. If you are craving food from back home, **Royal East**'s menu is filled with authentic Singaporean and Malaysian dishes. You can complete the day with a hearty lobster dinner at **Legal Sea Foods** or be adventurous with a unique culinary experience at **Fire and Ice** (which has a discounted student price on Mondays!)



ASIAN LEADERSHIP PROGRAMME

SUTD's collaboration with Zhejiang University (ZJU) includes a summer exchange where students work on hands-on projects revolving around a number of design themes, with internship opportunities in Hangzhou and field trips to places outside the city. Every year, SUTD students have the opportunity to apply for this fully-funded programme. In May 2014, 96 selected students headed to ZJU for the Asian Leadership Programme (ALP).

STUDENT PROJECTS
(From left to right)
1st row: Smart Home, ILUMA Intelligent Lighting Units Management App, Smart Switch, Project NION: Plant Air Ionizer
2nd row: 'In-Young' Interactive Air Purifying Pet Plant, Surveillance Bot, Reflective Compression Sportswear, Café in the Woods
3rd row: ECG shirt, Therapeutic Pregnancy Chair, ScrApp, Swiss Army Bipolar Forceps
4th row: 'EasyPen' Electro-surgical Pencil, '*Hai Bao*' e-Commerce Practice, West Lake Lampshades, 'Dining by the Lake'
5th row: Modular Compression Sportswear, Smart IQ Pet Toy, 'New City, New Beginnings', Pedogmeter
6th row: 'Sensations by the Lake', Bamboo Lampshades, 'Spaces' App, 'New Leaf' Eatery

(Opposite page)
1st row: 'COOLER' Carbon Sequestration Plant Air-conditioner, ScrApp, 一轴二心四区多节点 'One Axis, Two Core, Four Districts & Focal Points', Friendly Charger
2nd row: Motor 'Run-Away-From-Me' Ball, 'Gardens by the Lake', 'Freedom' Personal Electric Mobility Device, Modular Compression Sportswear
3rd row: The Patient Return Electroskin, 'A.equanimity', 'BOLT' Bipolar Forceps, Flower Lampshades
4th row: 'Clover' Autonomous Aerial Camera, 传统于现代相遇 'Where tradition and modernity are in synergy', 动漫异帮人 '*Dong Man Yi Bang Ren*' e-Commerce Practice, 'Rejuvenation'

9 ALP THEMES

Smart Family System with Plant Factory
Under the guidance of a technology company, students developed innovative designs and prototypes for home systems.

Smart Home with Plant Factory
This theme explored air purification, air ionisation and carbon sequestration to integrate plant properties in designs.

User Experience and Interactive Design
User experience can be explored in many different ways. Students did this through application design, e-commerce interface and even in the design of toys.

Medical Device Design
Students researched and developed innovative designs for medical devices such as an electro-surgical pencil.

Culture, Gifts and Product Design
Through immersion in the Chinese culture with traditional sights and local sounds, the final masterpiece created embodied the culture of Hangzhou, while combining tradition and modern inspiration.

Classical and Contemporary Landscaping
Students were attached to a local architecture and design firm, with the opportunity to work with different studios on real-world projects.

Architectural Design
Students took on twin challenges of designing spaces within a built area and the constraints of nature, while integrating elements of the Chinese culture and traditional architecture.

Healthcare Engineering and Healthcare Products
Under the tutelage of industry professionals, students set out to redesign healthcare engineering and products in innovative ways.

Self-initiated Projects
Passionate about exploring independent topics, some students chose to explore a foldable energy-saving electric vehicle for city dwellers. Another group designed a quadcopter capable of following the user autonomously and taking aerial shots.







LIGHTS AND SILHOUETTES
by Lim Xin Wan Cheryl, Culture, Gifts and Product Design team

During the course of ALP, we set out to design a product that encompasses the culture of Hangzhou and Singapore.

While visiting the cultural sites around Hangzhou, we discovered *Xuan* paper, a traditional Chinese invention important to China's culture. Many ancient writers and painters used *Xuan* paper as a medium for artistic expression. We were inspired to make lampshades using *Xuan* paper and the paper mache method.

We experimented with different elements to portray Hangzhou – flower petals, tea leaves and bamboo strips. With sufficient layering, we also found the same lampshade would look different when lit and unlit.
After a few trials making use of different types of *Xuan* paper to create different effects, we explored printing silhouettes of Hangzhou. In a bid to incorporate Singapore's culture, we also made a lampshade that featured the Singapore skyline.

Though our journey was riddled with setbacks and many times, we found ourselves back at the starting point, one important takeaway was that the process of design is never fixed and there are certainly many ways to go about it.

THE ACTUAL SITE

OUR FINAL DESIGN, A.EQUANIMITY

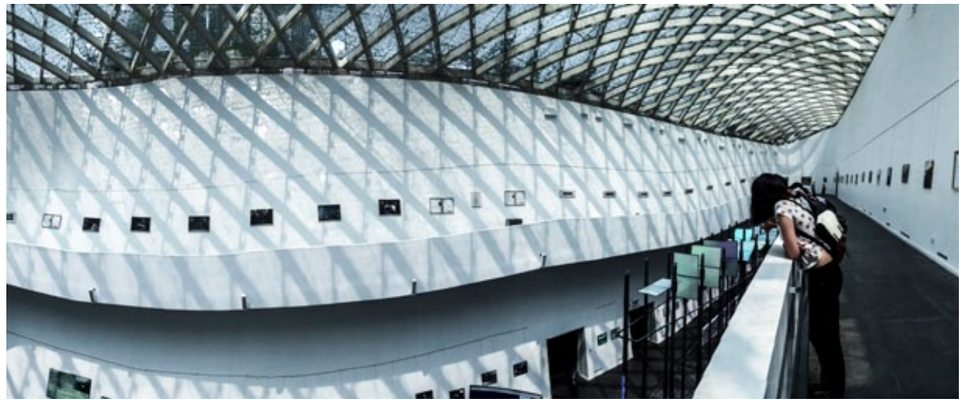
NATURE, CULTURE AND ARCHITECTURE

by Seah Jia Neng, Architectural Design team

Coming from an urban environment like Singapore, this was a rare opportunity to work so closely with nature - a site surrounded by trees. We were tasked to design a restaurant in an existing resort, Lotus Glade 52, in a park near Hangzhou's famous attraction, *Xihu*, or West Lake. The challenges we encountered were new to us. For example, all the trees at the site were to be conserved. Our design also had to withstand the different seasons. Each week, we visited many sights and museums in Hangzhou and learnt more about the culture. During our field trip to *Fayun* village, a historical upland folkhouse complex, we were inspired by the harmony between architecture and nature. Along the way, we observed houses that varied in height due to random stairways, which we later incorporated as an element in our design.

For the external facade of our restaurant, we were inspired by the resort's surroundings. In contrast to the tall trees, our restaurant would be flat and low. We envisioned a huge, open rooftop that allowed people to enjoy the view of West Lake. The next challenge was to balance nature's serenity and the restaurant's lively ambience. After much thought, we took inspiration from the river surrounding the restaurant, and designed the interior with the river's flow in mind.

ALP was a really great experience for us. Our mentor, an architect from Andi Architecture Firm, made sure to place emphasis on designing with a purpose and taught us a great deal of technical skills and knowledge. The journey has well prepared us for our coming pillar year and simultaneously reaffirmed our choice to pursue architecture.

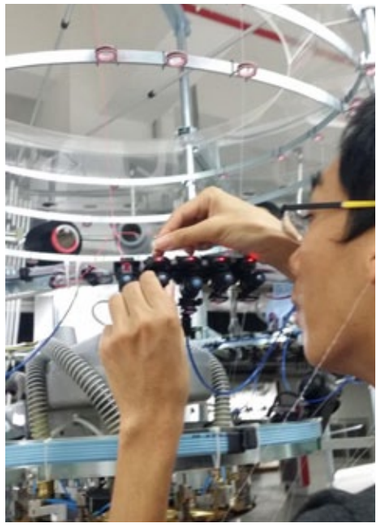


Visiting a Museum at Xixi Wetland National Park

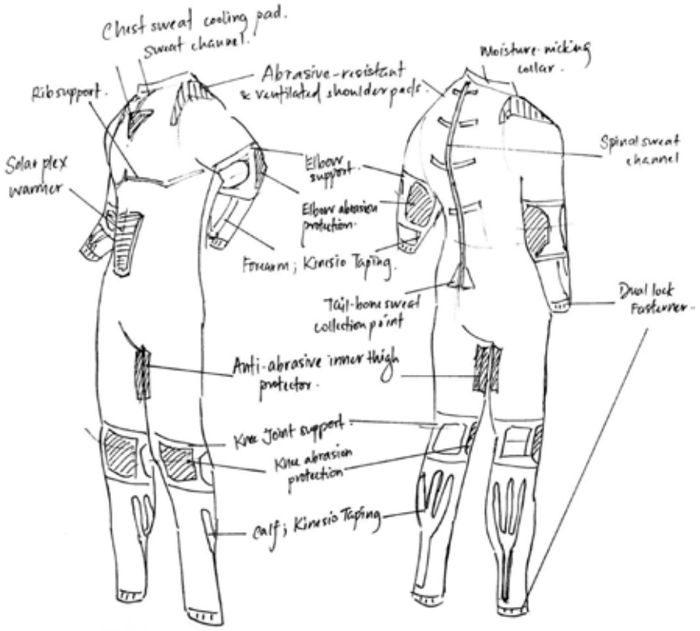
Prototype of Restaurant Interior

Drawing Inspiration from Xitang Water Village

Prototype of Restaurant Exterior



Clockwise from left: Ryan preparing the high-tech sewing machine, the team, sketches of the design process.



"There were 4 unique compression wear designs produced by our team:

• Calisthenics
• Netball
• Modular
• Reflective"

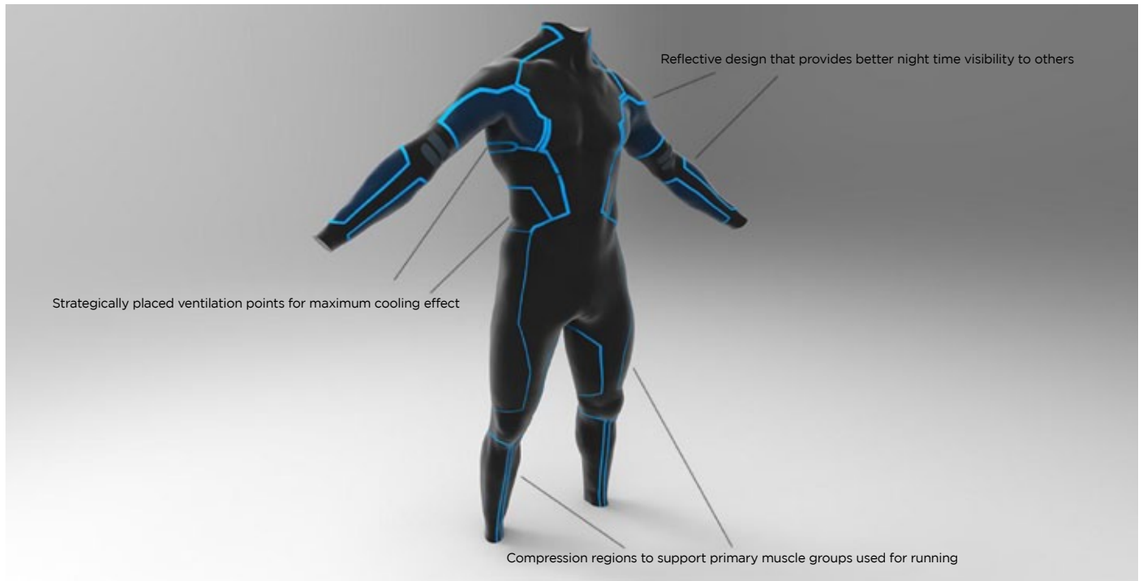
SUIT UP

by the Healthcare Engineering and Healthcare Products team

THE DESIGN PROCESS
Being completely new to the field of compression sportswear, our first step was to embark on research. We started by drafting our designs with pen and paper. Subsequently, a digital interface allowed us to easily manipulate the designs and generate variations such as different colours. We did our best to unite aesthetics with functionality. When the design was finalised, the digital copy was conformed to the templates used by fabricating machines found at factories.

APPROACHING THE PROBLEM
The best and most effective way of approaching a problem is to obtain first-hand knowledge. We needed to put ourselves in the shoes of the common user to craft educated, practical designs. Personal experience provides valuable insights into the utility of a product's function and existing products found in the market are proof of their usefulness.

Reflective Suit



INSPIRATIONS
There were four unique designs produced by our team, namely the Calisthenics, Netball, Modular and Reflective compression sportswear.

The Calisthenics sportswear was inspired by Bruce Lee and his extreme training routines. The Netball sportswear drew inspiration from the result of greater comfort and safety with specialised equipment. Modular sportswear was derived from the modern athletes who personalise their exercise outfits and routines. Finally, the Reflective sportswear aimed to provide safety for athletes who prefer to run at night.

THE TAKEAWAYS
Working as a team taught us to be patient, open-minded and cooperative. We soon learned to recognise and employ our different strengths. Teamwork meant that work distribution was vital for effective workflow and adherence to deadlines. Nevertheless, we must not be afraid to criticise ideas and opinions of our peers, and offer constructive feedback.

We had the rare privilege of working at a Chinese textile factory, and were enlightened by the manufacturing process and experienced their not-so-luxurious living conditions. It made us truly appreciative of what we have. We also gained deep technical knowledge in several different fields, a prerequisite for good designs and product development.

THE ALP JOURNEY
The ALP journey taught us to be resilient and adaptable. Challenges appeared unexpectedly but we did our best to solve them. ALP gave us an opportunity to engage with corporations and practise real-world applications of designing. Despite not having prior knowledge in apparel design, we completed a full-fledged design process and fabricated functional prototypes, a true testament of our determination and camaraderie.

INTERNSHIPS

With over 350 companies pledging internships, it is a vote of confidence that the SUTD education will meet industry challenges and is what the world needs right now.

FAR EAST ORGANIZATION

by Leon Jared Cher

"*We shape our buildings; thereafter they shape us.*" – Winston Churchill

Having interned at an architecture firm before, I have experienced how Singapore's building and construction industry works from an architect's perspective. To understand the industry better and see it from a fresh perspective this time, I chose to intern at Far East Organization, the largest private property developer in Singapore.

During my internship, I was attached to the Product Development Unit (PDU). Since our primary business lies in developing real estate products, we are the driving force behind design conceptualisation and innovation, whether it is a condominium, hotel or office. The unit consists primarily of development managers with years of prior experience as architects and interior design. Thus, we are able to set the design direction and market an innovative lifestyle to our customers, not just a functional floor plan.

PDU works closely with the architect, contractors and consultants throughout a product's lifecycle, from the successful bid for a site, sales launch, construction and even after obtaining TOP (Temporary Occupation Permit). This is to ensure that our original intentions are carried through and delivered in the final product.

Being involved in a range of projects at various stages of development exposed me to different project typologies and the property development process. Here are just some of the things I could do on a normal day – studying floor plan options with the architects; coming up with space-maximising solutions; working with interior designers on the sales gallery; attending meetings with consultants and planning authorities; going on site visits.

With more than 60 years of history, Far East Organization has played a significant role in shaping Singapore's urban landscape, guided by its vision of "Inspiring Better Lives". I am glad to have had a first-hand experience to understand the organisation's work in creating customer-centric products, through a strong focus on quality improvement and an attention to architectural detail. The organisation also gives back to the society at all levels, whether through space philanthropy (URA's Community/ Sports Facilities Scheme for commercial developments) or by supporting non-profit organisations such as Habitat for Humanity in community projects (which I had the opportunity to volunteer for).

As an aspiring architect, I feel encouraged to see that creating value in architecture for people is possible, even in an industry largely driven by the real estate market and rising costs. As a developer, the projected needs of future purchasers have to be considered, giving rise to a different set of concerns compared to the authorities or consultants. I was introduced to new concepts, such as floor plate efficiency, landscape replacement, share value and how to create products for different markets. Learning about all these has been valuable and I feel that it is also a good precursor to next term's module on the fundamentals of valuation in the built environment.

I am truly grateful to the organisation, my colleagues and everyone else who have made this internship possible. I look forward to seeing and learning much more, about this multi-faceted industry in the future.

"I HAD THE OPPORTUNITY TO LEARN FIRST-HAND WHAT STEWARDSHIP IN ACCENTURE TRULY MEANT – CONTRIBUTING TO THE DEVELOPMENT OF OTHERS THROUGH YOUR ACTIONS AND DECISIONS."

ACCENTURE

by Ian Teoh

I used to ponder what career choice I should make in the vast sea of options, and it was in my wandering that I stumbled upon the consulting industry. I was privileged to have my first internship with Accenture. Being part of the largest consulting organisation in the world, in terms of revenue, there was a very strong support structure in place to enrich my internship experience. Through my 16 weeks of work, I have gained a much deeper understanding of what it takes to be a consultant. As the saying goes, "Consultants always speak in threes" and I would like to share with you the top three lessons from my internship experience:

ANTICIPATING NEEDS OF CLIENTS

Being a consultant, the client's business is very much your business as well. Often, you are engaged by the client to help them solve a business need which they are unable to solve themselves. Sometimes, the client does not even know what they want, and you have to figure it out along the way with them. This process tends to be extremely hectic as situations and requirements can be rather complex, hence it is important to know what the client really needs and quickly zoom into the heart of the issue.

NAVIGATING THROUGH INFORMATION

Consulting firms always look for a structured thinker when hiring, and for good reason. Information is usually difficult to obtain, challenging to organise and very unlikely to be exhaustive. At times, I had to zoom out and think of a more efficient way to handle all the information, which was especially demanding with looming deadlines. The need to be aware of the big picture whilst focusing on the minor details at the same time kept me on my toes and developed my mental acumen.

STEWARDSHIP

The definition of stewardship was extremely ambiguous to me before my internship. As it was a core value of Accenture, I had the opportunity to learn firsthand what stewardship in Accenture truly meant – contributing to the development of others through your actions and decisions. At the start of my internship, the stewardship of my colleagues ensured that I understood what I was doing through careful guidance. Providing a set of instructions without spending time to explain its rationale would have been the easy way out. This helped set the tone of having a positive learning attitude for all within my team which deeply enriched my internship experience. The act of learning and teaching in my project team reminded me very much of SUTD's unique collaborative culture, giving my workplace a very homey touch.

ROHDE & SCHWARZ

by Alvin Goh Cheng Ann

Given that I was interested in test engineering and also considered a career option in electronics engineering, I decided to take up an internship with Rohde & Schwarz. Rohde & Schwarz is an international enterprise originating from Germany, Munich. It specialises in electronic test and measurement equipment and the fields of radio monitoring, broadcasting and electronic communications.

The internship project had me posted to the radio-monitoring division, where I was supposed to be a tester for the GUI (graphic user interface) of the more recent flagship devices of the company. Apart from this, I was to mainly review and edit test scripts for the GUI, adapting them for another newer device.

The process of debugging was a long one, with days of tracing the errors that arose – and yet the moments of satisfaction when the code could run once more with sometimes the simplest of fixes. The project allowed me to learn the concept and process of troubleshooting. It did remind me of how hard we had to work in order to solve pertinent problems and that there was no single answer to them.

In spite of the seemingly singular task of debugging, there were so many things to learn and pick up. Learning the functions and applications of the device I was working on was an interesting experience, an endeavor that took about a week or two while physically testing the GUI. I had to use a new software (Squish) and running tests through it was an interesting insight into programming work.

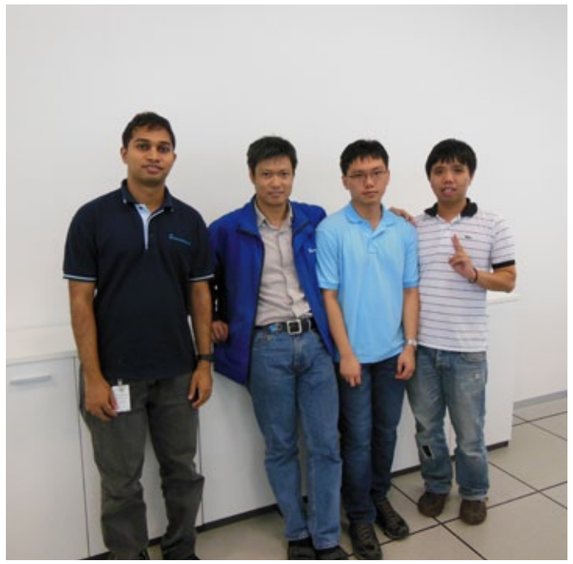
While I had worries about not being able to handle the large scale of the project, my supervisor and the staff were patient in guiding me through the technical aspects within the project and also gave me free reign to accomplish it as required.

The company also places an emphasis on learning opportunities and initiative. Reading materials and technical articles are available at the department's notice board, ready for any employee to browse. My supervisor and colleagues within the same team would sometimes ask me to complete some technical tasks. I had to research the technical knowledge behind some devices, ask colleagues for the relevant technical expertise and personally utilise the lab equipment. In spite of some fumbles along the way, I found these technical exercises valuable.

Employees are also encouraged to go for various courses that improve their skill set. On the encouragement of my supervisor, I had the opportunity to attend the Python Conference 2014. The two day conference was an interesting experience, learning about the updates and applications of the programming language I first learnt.

I am glad to have taken up this internship. Perhaps it would be a factor in considering my future career path.

"PERHAPS IT WOULD BE A FACTOR IN CONSIDERING MY FUTURE CAREER PATH."



P.A.C

by Clifford Mario Kosasih

As a small 9-member strong architecture and design firm, P.A.C. has done various projects ranging from interior design to a hotel. During my time there, I was involved in the renovation and refurbishment of a shop house in Stanley Street, that is to be converted into a cabin hostel targeted at backpackers. My experience in this project has been a good balance between design and construction, 3D model and computer-aided design (CAD) drawings, as well as office culture and site meetings.

DESIGN AND CONSTRUCTION

My first task during the first few weeks was to come up with a design concept for the main circulation access for the hostel: which included a staircase and corridor. I was then asked to design steps to allow guests to access the upper bunk of the cabin room, and subsequently to propose a design for the loft rooms. Designing in real life comes with great responsibility as the end users' safety and satisfaction is our main concern. Fortunately, during my time in the company, I got to see some mock-ups and end products. It was definitely a unique experience for me to see how the designs were being realised.

3D MODELLING AND CAD DRAWINGS

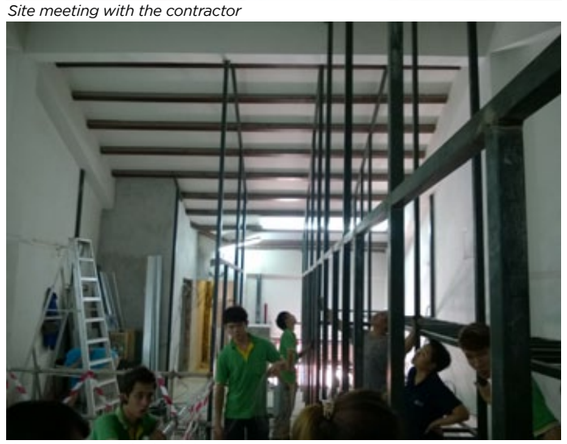
During the design process, I had discussions with my supervisors (who are also the designers and clients) regarding the intent and feasibility of the designs. We usually start by looking through the 3D digital models and renders, followed by a consultation with the engineers and contractors. After the designs were approved, I continued by setting up construction drawings. It was during this phase of the process where I learned the most and understood the thinking behind how different things are being constructed. This is also the time when I realise that however precise your CAD drawings are, in real life, there are always tolerance and discrepancy caused by site conditions and other human factors.

OFFICE CULTURE AND SITE COORDINATION MEETINGS

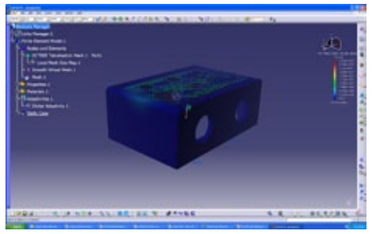
It was definitely a new experience working in a small office. Communication within a team who handles the same project is also easier as everyone works in the same room. As much as I love being in the office, it was also interesting when my supervisors brought me to the weekly coordination meetings where the main contractor, interior design (ID) contractors and M&E consultants were present. These two to three hour on-site meetings were really the highlight of my summer internship as I got to communicate directly with the contractors, witness the heated discussions between the different parties and saw how the site evolved week by week.

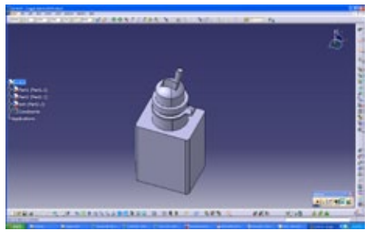
Steps designed for the upper bunk

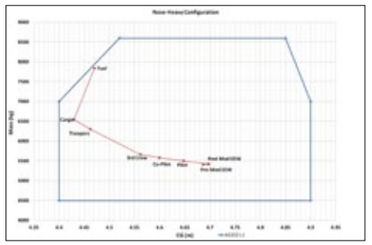
Site meeting with the contractor



Construction of the bunk bed







Some of my work

AIRBUS HELICOPTERS SOUTHEAST ASIA PTE LTD

by Elizabeth Seto

This summer, I had the opportunity of interning at Airbus Helicopters Southeast Asia (AHSA). AHSA is a subsidiary of Airbus Helicopters (previously known as Eurocopter) - the world's leading helicopter manufacturer.

In my four months at AHSA, I was attached to its Design Office. The Design Office focuses on providing design support for the customisation, retrofitting, comprehensive and highly customised solutions for the customer's needs and ensuring that airworthiness requirements are met.

Throughout the internship, I was introduced to many new projects that broadened my learning experience. I was involved in doing various forms of compliance documentations; such documents ensure that the modification done to the helicopter meets airworthiness requirements in various aspects such as structural strength, weight and balance. I was also exposed to doing drawings and Finite Element Analysis on Catia along with electrical drawings on AutoCad.

It has been an eye-opener to experience first-hand how engineering concepts are used in the real world, particularly the aerospace industry. I was also challenged to view the projects from different perspectives and not simply from the engineer's point of view. In order to develop the Flight Manual Supplement, I needed to extract key information from the Pilot's Guide and OEM for a high frequency communication system and distance measuring equipment, and phrase it such that it will be easy for the pilot to understand.

The location was a perk too. Being located right next to Seletar Airport meant that I was fortunate to constantly be able to see and hear planes and helicopters taking off. I was also able to get up close with the helicopters in the hangar, as I occasionally needed to measure and refer to the dimensions and locations of equipment on-board.

I was also blessed to have a supervisor, Mr Leo Jeoh, who was very supportive of our learning. He had no objections to me attending an aircraft cabin design seminar organised by CAAS during office hours. Despite his busy schedule, he also met the SUTD interns every week to guide us on our project. The other design engineers were also very willing to answer any doubts and queries that I had.

The four months internship at Airbus Helicopters has been a valuable learning experience which would not be possible without the guidance received from the mentors.

"BP PROVIDES A NURTURING ENVIRONMENT WHERE I CAN WORK AT A COMFORTABLE PACE, AND FEEL TRUSTED BY MY SUPERVISOR AND COLLEAGUES."

BP SINGAPORE

by Jean Tan

If there's one most remarkable thing I learnt at BP Singapore, it's that a utopia can exist. I might exaggerate a little, but it's not too far from the truth. BP provides a nurturing environment where I can work at a comfortable pace, and feel trusted by my supervisor and colleagues.

In my 12 weeks at BP, I took on two main projects.

- Developing a fast, intuitive and organised application which serves to consolidate the different channels of communication that are used in the company, so that the messages get to the right target audience.
- A second application which analyses the sentiment of customer feedback, particularly for the IT Service Desk to aid the improvement of its service.

Working at a large multinational company, which believes in cooperation and coordination across its offices, exposed me to different considerations. One of them is that the applications have to work seamlessly globally. To this end, the Information Technology & Services (IT&S) divisions across the globe carefully make use of the various time zones to provide 24/5 support for all the applications. As a developer, I have to ensure that information from my application can be quickly and clearly communicated amongst the different offices.

Despite my unfamiliarity with BP's technologies, the projects turned out well because of the buddy system and helpful colleagues. My buddies were Christina Choi and Jonathan Chee, both of whom are Challengers in the IT&S Graduate Programme. A two-year programme, the Challenger is placed in a support role and a delivery role each year so as to explore their capabilities and interests. Selected Challengers are likely to be from the group of undergraduates who take up an internship with BP during their penultimate school year. Christina and Jonathan not only helped me to understand the organisation's work, but also introduced me to other colleagues in the Integrated Supply & Trading (IST) division of BP. Besides my buddies, my supervisor, Kevin Liu, was also very encouraging and kept pushing me to achieve more, and gave credit where it was due.

All work and no play makes life a dull one. At BP, we always had fun together! There were plenty of events for mingling and getting to know others' work, regardless of their role or rank. For example, during the World Cup kickoff this year, I had a great time talking to different people from multiple sections, while enjoying a delicious buffet meal generously provided by the company. Throughout the World Cup, BP replayed matches during the day in the well-stocked pantry. The 12 interns would gather for lunch, and catch some of the match together.

BP makes a tremendous effort to ensure their employees are safe and happy. Not only are we physically comfortable (in excellent chairs), we are also constantly reminded about our code of conduct, values and behavior. Everyone is held to high standards, which creates a very supportive and respectful community. If I have the opportunity to continue working at BP, I would be delighted!

MORE THAN JUST AN ORDINARY SUMMER

Whether it is to pursue a passion in the performing arts, give back to the community or even scale new heights, SUTD students made sure their summer break is one they would never forget.

Photo credits: Chua Wei Zhen

**"There are no distractions –
Just you, the beautiful scenery, and your book."**

SUTD MOUNTAINEERING

by Samuel Chin

Why mountaineering?

There are no distractions – just you, the beautiful scenery, and your book.

What is the highest the team has gone?

Our highest summit so far is Friendship Peak (5,289m) in India, the toughest climb that we had. Being the season's first team to climb Friendship Peak, the snow was fresh and we had to cut a path through the thick snow. The cold winds buffeted us and we felt like giving up. We persevered and were eventually rewarded with breathtaking views!

We hear SUTD Mountaineering plans to conquer a mountain and name it after SUTD. How is the training like?

We train five times a week. Our physical training involves doing weights at the gym, endurance runs up to 10km and walks at Bukit Timah Hill with 18kg backpacks for three hours or more. Mentally, you need to have a very strong will – to prepare for the summit push, where we have to wake up at 3am at negative temperatures in our tent and put on our cold clothes.

**NEWSFLASH:
On 31 August 2014, 1215hrs (Indian time) the SUTD Mountaineering team successfully conquered the 6,056m peak of an unclimbed and unnamed mountain on the Indian side of the Himalayas and named it Mount SUTD!**

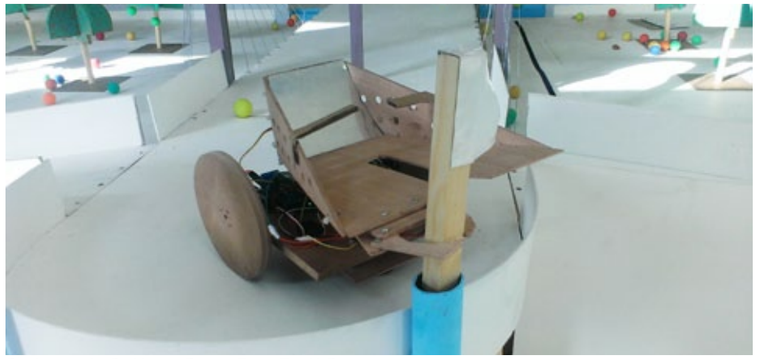


Photo credits: Dr Mohan Rajesh Elara, Tan Yi Ren

IDC ROBOCON

Chua Jie Han, Samuel Lee and Tan Yi Ren, winners of the SUTD Technology and Design Challenge 2014, represented SUTD at the International Design Contest (IDC) Robocon 2014. Yi Ren and Samuel were part of the teams that emerged 1st and 3rd place respectively.

IDC Robocon is a global robotics competition held annually. This year, hosted by Mohammad V University-Agdal in Rabat, Morocco, students from top universities all over the world gathered to share ideas and knowledge on robotics and develop a winning robot within two weeks.

"I really enjoyed getting to know different people and learning a little about their culture. These friendships forged over the two weeks is something I will treasure for a long time." – Chua Jie Han

Photo credits: PhotogCircle

1ST MONTH STEAMBOAT

On 3 June, all the Freshmores came together to celebrate their 1st month in SUTD in a big get-together event – the 1st Month Steamboat Party.

**Freshmore refers to a combination of the freshman and first half of the sophomore years.*

"Being new to Singapore and SUTD, the 1st Month Steamboat Party was a great opportunity for me to adjust to the new environment. It was a chance for me to meet fellow Freshmores. Through volunteering to organise the event, I had the chance to work with juniors and seniors, seek advice and satisfy my curiosities about the school."
– Lee Jisu

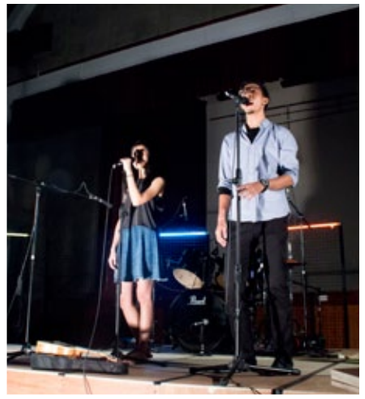





















Photo credits: PhotogCircle

OPEN MIC
by SUTD Bands

Open Mic was conceived in 2012 to be a platform for aspiring SUTD musicians to perform and for the SUTD community to come together for a wonderful night of music. Today, it has become one of the highlights of life in SUTD.
Open Mic is more than just the music - it's the support from our beloved friends and wonderful school community.

FIFTH ROW LEADERSHIP PROGRAMME

The Fifth Row Leadership Programme is an initiative designed for SUTD and MIT students to further develop SUTD's Fifth Row. Through a series of leadership sessions and exchange of ideas, participants explore fundamental management concepts to build a skillset applicable to their university experiences and future leadership positions.

What was your role at the Fifth Row Leadership Programme?

JULIA CANNING, MIT: My role was to help lead group activities which were designed to explore various aspects of leadership and to facilitate conversations about leadership skills.
WILLIAM KOH, SUTD: As one of the participants in the programme, I worked with the others to explore solutions to various scenarios.

What's your biggest takeaway from the programme?

J: It is certainly challenging to be able to successfully engage people, but it was fun working to overcome that to plan successful events like the Fourth of July BBQ.
W: I had the opportunity to communicate with fellow students from other countries and cultures while learning more about the qualities of an excellent leader, which is what I am working towards.

**Fifth Row is what we call co-curricular activities at SUTD because it is the fifth activity students do every term in addition to their four academic subjects. Very much part of the SUTD culture, we dedicate time to it - two afternoons each week are reserved for Fifth Row time.*

"WE WANTED THE ELDERLY RESIDENTS TO DEFINE THE PROBLEM, DESIGN WITH US AND TAKE OWNERSHIP OF THE CHANGE THEY WANT FOR THEIR COMMUNITY."

INSIDE OUT

by Jezamine Chua

Inside Out is a community design project by Studio (an SUTD Fifth Row) to redesign and revitalise neighbourhood senior activity spaces in Singapore. With Ministry of Health and Alexandra Health System, we set out with a vision to actively engage elderly residents in our design process to empower them to envision and co-create the change they want for themselves.

We wanted the elderly residents to define the problem, design with us and take ownership of the change they want for their community. We sought to understand them better by digging deeper into their lives, stories and voices, engaging them in workshops, discussions and making design choices. The experience of working together with the people we were designing for renewed our perspective and approach towards design.

Together, we crafted Inside Out, which studied the design of movable and modular furniture that created additional pockets of outdoor spaces. We designed a pair of benches which could act as screens to hide the clutter, social exchange in the void deck, and vertical checkerboards for community bonding.

Finally, with everyone's expertise, we turned our designs by hand into a reality for and with the elderly residents we have come to love!

SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN

Established in collaboration with MIT

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