



**THE NEESON
CRIPPS
ACADEMY
IN ACTION**
IMPACT PROJECTS



INTRODUCTION



Giving students from the most impoverished of backgrounds access to a high quality education, comparable to standards in more developed countries, is our mission.

We want to give these children, most of whom would never have the opportunity to attend school, a solid academic foundation to give them the best chance of a bright future.

Education has the power to end poverty.

But we want to give our children more than just an education. We want our children to become leaders and achieve beyond their wildest hopes.

Offering each child a STEM-focused education and world-class facilities provides a platform for them to dream big.

By investing in future technology leaders, CCF is helping create a generation of empowered Cambodian youth. These will be change makers, capable of helping shape a new Cambodia and contribute to the country's growth and economic development.

Cambodian Children's Fund is leading the way in STEM education in Cambodia and this investment is paying off with proven success. Our students are shining in and out of the classroom, and on national and international stages.

We're very proud of the achievements of these CCF students and wanted to show you some of the amazing projects that they have been working on.

Some of these projects have benefited the community or the country. Others have had wider audiences, featuring in global competitions.

All are sparking our student's curiosity of the world around them.

We hope you enjoy reading about the incredible work that CCF students are producing and seeing how it is helping shape them as the leaders of tomorrow.

Thank you to our supporters for enabling us to deliver these projects at the Neeson Cripps Academy.



TECHNOVATION GIRLS



Girls are still underrepresented in science and technology jobs in Cambodia, which is something we want to change.

Which is why we make sure that all our female students have the opportunity to study STEM subjects and actively encourage them to consider careers in these developing sectors.

Walk into our laboratories at the Neeson Cripps Academy (NCA) and you'll see CCF girls participating in everything from science experiments, learning about physics or doing practical work with Bunsen burners.

We want to make sure that learning inspires them.

Taking part in competitions - small and on a larger scale - is a great way for our girls to challenge themselves.

Technovation Girls is one of these opportunities.

The world's largest tech entrepreneurship program focused on girls aged 8-18, it aims to help address the global gender gap in technology fields - something we are also very passionate about.

We love how it gives our girls the chance to get really hands-on in STEM, empowering them to become leaders, creators and problem solvers.

Girls work in teams over three months to design and code mobile apps to address real world problems in their community.

CCF teams have competed in the national Technovation competition since 2018.

Using the skills and knowledge acquired through our STEM teaching, our girls have been Technovation stars, flying the flag for CCF and Cambodia.

Girls like Sovannry and Hoarng. They were in one of three CCF teams to enter the competition in 2018, with their team creating an app for science experiments for public schools.

Another CCF team (called Potential of Girl) reached the global semi final with their app to help teach people the Khmer language.

The following year our female STEM students came up with an innovative app for cyclo transport in Cambodia. Shortly after, ride-hailing apps were commercially launched in Cambodia for taxi and tuk tuks, proving that our girls were bang on trend - and ahead of the curve!

In June 2020, we were thrilled to see our NCA team 'The Geek' win the National Grand Prize. They won the Senior Division with their app. Slek Rit, to help young children read and understand traditional Khmer stories. Way to go girls!

The team was later interviewed by the Ministry of Education, Youth and Sports about their success. We are so proud of them.

For 2022, Technovation has been extended to include girls from the age of eight. We can't wait for our younger CCF STEM girls to show what they can do!

IMPACT



Providing girls with platforms to showcase their work is not only integral to their development but helps refine all sorts of skills that will be useful in life.

Technovation is all about allowing creativity and ideas to flow.

Girls who take part say that it instills confidence in their abilities with the freedom to express themselves.

We know that it can help improve their problem-solving skills (knowledge that can then be applied in all areas of their life), ability to generate new ideas and seek out new information.

It's great fun for the girls taking part - and they're also also learning at the same time.

Teamwork, responsibility and accountability, as well as technical expertise such as coding, and life skills and business acumen, are all picked up along the way.

All of which will help them in later life, whatever career path they choose. It's also character building - helping mould well-rounded individuals. We want our students to grow into self-assured young adults, active in their communities, society and country.

Some of our past Technovation stars have gone on to achieve incredible things.

Sovannry and Hoarng, who competed in the first CCF Technovation teams in 2018, both won a full scholarship to study at Trinity College in Australia, as part of our academic partnership. They are now studying for degrees at the University of Melbourne. More CCF female high flyers are coming up behind them.

We're looking forward to sharing their successes in the future. The sky's the limit!

***"I'm so passionate about technology.
I want to show the world that girls
have the ability to be successful tech
entrepreneurs.***

- Srey Mei

NCA student and Technovation

'The Geek' team member

STUDENT MAGAZINE



While lots of schools have student magazines, we like to think that ours is particularly special.

Not only was the idea conceived by one of our students - thanks Udom! - but the whole magazine is project-managed by CCF leadership students and written by our students, for our students.

So, it's very much a student-led production. Our staff are just there for guidance and to lend a helping hand when needed.

2021 is the third edition of the magazine after an enforced break the year before as COVID disrupted our Education Program with school closures across the country.

Meaning our students were even more excited to be back in the creative groove.

Back in 2018 the concept for a CCF student magazine was nothing more than a spark of an idea in the head of one of our talented leadership students, Udom.

Udom was competing to be CCF's alumni at the annual Tony Robbins Global Youth Leadership Summit (GYLS). As part of the process, students are asked to create a leadership project for CCF, which will be implemented if they are selected to go to the Summit.

Udom's idea was for a student magazine, written by youth for youth.

While he was not picked as the GYLS alumni, we liked his suggestions so much that we decided to make it happen.

And so the CCF student magazine was born!

We wanted the magazine to be a platform to showcase the potential of each student and capture all their high school memories, as well as giving them the chance to learn writing and design skills.

As it coincided with the start of CCF's partnership with American multinational computer software company, Adobe, it was an ideal opportunity to utilize the training and software we'd received.

In Udom's own words, his vision for the magazine was to give an insight into Cambodia and the CCF community,

where the students live and go to school. Seeing his 'dream' become a reality was incredible for him.

27 CCF students, staff and guests worked to bring the first CCF student magazine to life.

Students were split into two teams: production and design, and writing.

Just like a real magazine, they were assigned 'jobs' such as Chief Editor, Production Editor and Coordinator, and worked to deadlines (most of the time!) with students commissioning other students to write and take photographs for articles conceived by them.

One thing the students were adamant about was that the magazine should be bilingual, in both English and Khmer. This meant they could reach out to all youth in Cambodia, whatever their education or background, talking about the issues that mattered to them and opening up new topics for discussion.

Called 'Bang Kert' or 'Create Change', the first magazine was packed with all sorts of articles ranging from a look at Khmer culture to a 'Then & Now' look at the land where the NCA was built, and what CCF teens do in their downtime. There was even a Q&A with a couple of CCF grannies.

As our students wanted, we made sure it was shared with youth groups and schools, so it was read by those it was originally intended for: young people.

Giving a voice to CCF students, in a project managed by our leadership students, was a challenge.

But they smashed it!

Feedback for the magazine, within CCF, from our supporters, donors and partners, and others, has been fantastic.

2019's magazine was equally well received and we're expecting the same for the 2021 edition, which incorporates more digital content with QR codes and links to videos.

Just as Udom (who is now at university) hoped, it gives a unique insight into the life of CCF students, our communities and Cambodian youth, connecting with other teenagers locally and internationally.

IMPACT



Having the chance to work on a real world project like a magazine is introducing our students to new working practices and a new skill set.

They're getting to grips with graphic design software, along with design processes and creative thinking.

They're not only learning about Adobe software such as InDesign but using it practically to put together magazine pages - skills that will be useful in a future Cambodia where technology and digital literacy will be key.

Students are improving their English skills for writing and communication in a work environment with real-time pressures. We're keen at CCF to give our students a taste of life after CCF and what they can expect.

Project-based learning allows our students to put into practice the leadership qualities we teach them: teamwork, problem solving, decision making, time management and responsibility.

All while working on a real project with deadlines, timelines and a tangible outcome.

Along the way, they're learning how to troubleshoot, deal with mistakes and adapt; flexibility, they've discovered, is a vital skill in their personal and work life!

Equipping our students with real world skills within a STEM setting is just part of the picture.

We're also instilling them with confidence: confidence in their own abilities to excel in school and outside of the classroom, and confidence to express themselves in their own unique, individual ways.

"It's my first time being a part of such a project. I am having so much fun learning. We are all getting to know each other and also sharing creative ideas. Joining the magazine team is helping me learn how to manage my work and time. I'm learning more about myself through this project."

- Malita, NCA student and Chief Editor for CCF's 2021 student magazine

WORLD ROBOT OLYMPIAD



Take robots, LEGO and add in some CCF students and you have the ingredients for some technological magic!

Little wonder that our talented STEM stars jumped at the opportunity to take part in the World Robot Olympiad - an awesome annual global robotics competition for young people.

We want our students to think global, not just local.

So a competition that brings together young people from all over the world in a fun and engaging way - and with robots to play with - was a perfect fit for our students and CCF's ethos.

The aim of the World Robot Olympiad (WRO) is to give as many children as possible the opportunity to get involved with robotics in a challenging but educational way.

It's a chance that many of our students, who come from the most impoverished backgrounds in Cambodia, would never have without CCF and the Neeson Cripps Academy.

WRO started in 2004 and is now active in over 80 countries, where national events are organized yearly. The winners of national competitions qualify for the international final, held in a different country each year.

To give you some idea of how popular it's become, over 75,000 students took part in one of the 2019 WRO competitions!

Open to young people aged from six to 19 years old, the event uses LEGO Mindstorm, manufactured by LEGO education. These kits teach kids how to build and program robots, equipped with Bluetooth technology.

You can imagine how excited CCF students with fascination for technology and robots were to get involved.

In the first year the NCA was up and running (2017/2018 academic year), CCF decided to join the WRO competition.

At their first attempt, our young techs did us proud - received the 2nd and 3rd prize for the Senior category in the national round in Cambodia and entry into the global final held in Thailand.

While we didn't win the grand prize, all of our students were winners in our eyes. They had a chance to measure

themselves up against other competitors from developed countries and top schools, perceived as better and smarter, and showed themselves as equals.

Their own perceptions of themselves changed too with a belief in their own abilities. That's a victory in our eyes!

In 2019, our teams showed what this self-belief can do.

Months of hard work, long hours and perseverance paid off with CCF claiming 1st place in both the Junior and Senior categories in the WRO national round, and 2nd in the Seniors, winning places in the WRO global final in Hungary.

Six CCF students took part in the event under the WRO theme 'SMART Cities', tasked with creating new concepts and technologies to potentially help build the cities of the future.

Up against some of the finest young technical minds around the world, they more than held their own.

Among their designs was a smart trash collection system.

The kids - and CCF staff - were bursting with pride at representing CCF and their country, showcasing their creativity, coding skills and cool robots. While they didn't triumph in the top prize, they gained valuable experience and skills for their education and future.

Their success has inspired more CCF students to become interested in robotics. We hope that this interest will one day see CCF and Cambodia take the top prize at the WRO grand final!

IMPACT



Competing against other youth from Cambodia and internationally, gives our students the motivation to be their best and fulfil their potentials - and dreams.

They can live out their passions on a global stage, steps in their journey from one of the most marginalized communities in Cambodia to a brighter future filled with promise and hope.

Putting in practice skills learned in the classroom from curriculum content and our STEM-focused education at the NCA, they have the freedom to be creative and express their ideas in a supportive and non-judgmental environment.

They're learning key skills such as collaboration and teamwork, and developing their problem solving and critical thinking. These skills are transferable to the classroom and future careers they choose to follow.

Being part of the WRO can boost confidence and self-assurance, both individually and collectively, and this self-belief can lead to an improvement in schoolwork and academic performance.

“Competing in an international competition taught me how to be independent and leave my comfort zone. It was very challenging but these experiences are magic moments. It had a huge impact on me as a student: I started to see how important robotics and automated systems will be in a future Cambodia.”

- Vannak, NCA student and member of Team Skeleton, which competed in the Junior category at the WRO in Hungary

ROOFTOP GARDEN



CCF student Keom Ly Kheng was born in the countryside but when she was young, the family moved to the city where her parents became garbage scavengers in Phnom Penh.

The environment in Steung Meanchey around the former landfill could not be more different from the clean air and open spaces that Koem Ly Kheng knew.

But thanks to our innovative rooftop garden project at the NCA, Ly Kheng has been able to reconnect with her green roots and rediscover a love of the land.

Our amazing garden in the sky has given Ly Kheng and hundreds of other children living in one other most impoverished parts of Cambodia access to their own piece of country in the city.

The idea for a rooftop garden began to bloom in 2017 and blossomed in February 2019 when the first seeds were planted.

Now the garden is home to more than 50 plant species ranging from local herbs to dwarf bananas and a guava tree which is now bearing fruit two years after planting!

We make our own compost on site, have several hives of wild bees, nesting birds and even a worm farm (which was a bit hit with students from other schools when we displayed it at a local STEM festival).

Science classes have also used the garden for irrigation projects, various experiments and an essential oil distillation project, giving students a place to put their STEM subjects into practice.

From the outset, our goal was to provide students with a green space and outdoor learning where they could get more in touch with nature. It's like having an outdoor classroom - our STEM coordinator even refers to the garden as our third laboratory!

More than 144 CCF students have worked on the garden project.

All under the watchful eye of our resident green-fingered expert, Fraser Brown, CCF's Agriculture & Sustainable Development Coordinator.

Our term-time garden clubs bring together students with a shared interest in gardening and plants. Part theory (plant anatomy, life cycles, habitat) and part practical (planting,

harvesting, land preparation, plant surveys), they give children who might otherwise not have access to a green space, a place of their own to visit and get their hands into the earth.

From the roof garden, the remains of the former landfill where some of the earliest CCF students once lived and worked can be seen.

High above the noise and rubbish-strewn Steung Meanchey community below, they can enjoy fresh air and greenery, in a clean, peaceful space.

Our rooftop garden is their green oasis, a place to escape to when needed.

Ly Kheng was a regular in our Saturday morning gardening club and says she loved learning how to grow fruits and vegetables. It gave her and her friends a taste of being real-life farmers!

The rooftop garden has become a community all of its own, organically growing and developing.

We've had students volunteer as translators during clubs, sponsors from abroad help with classes, employed an intern (who is now in Israel on an agriculture scholarship) and produce from the garden has been distributed to some of our community members in the vicinity of NCA, feeding people on the poverty line.

We have a steady yield of perennial crops from the garden - currently averaging around 12kg per month (this was as high as 25-30kg when the garden clubs are running).

A roof was added to parts of the garden in October 2019, allowing it to be used as an outside classroom year-round, providing shade for the hot summer months and shelter during the rainy season.

Our dream that the garden would be a student-led project has come to fruition. Our students have been involved every step of the way from the design, development and implementation, to the planting, growing and harvesting.

It's a truly immersive learning experience.

IMPACT



Many of our students have chaotic home lives. Our rooftop garden is a tranquil sanctuary where they can sit and enjoy cool, green surroundings.

This contrast to their everyday lives helps them refocus and clear their minds, enabling them to better concentrate on their studies.

The magic of being able to see nature and species up close has opened our students' eyes and minds.

It's one thing to discuss the way dragonflies move on a whiteboard in a classroom. It's quite another to see a dragonfly buzzing around in front of you and watch the way it flies.

Our rooftop garden has given students opportunities to increase their scientific knowledge and understanding, while learning key personal skills for individual development such as problem-solving and improving communication.

Ly Kheng, our Saturday garden club devotee, says she learned so much from the experience: from building teamwork, to self-discipline and how to be well organized.

We also love the circle of giving that our rooftop garden encourages: we give our students an opportunity, they give their time and effort, and the fruits of their labor (the produce) is given back to the most in need in the community where they live.

Giving girls like Ly Kheng, and boys, the chance to reconnect with their agriculture heritage and discover their own passion for the earth has been so rewarding.

We're hoping that some of these budding young gardeners we've nurtured will go on to pursue their agricultural studies further at university or college - and contribute to the farming sector in Cambodia, considered the backbone of the national economy.

Who knows, we might even produce the first CCF farmers!

"I learned many things, new knowledge and new skills that I can apply in my real life. One important lesson I learned is from the plants. You grow plants today but the plants don't produce now; they will give to you tomorrow. It taught me how to be patient."

- Kris Chanra, CCF student and enthusiastic rooftop gardener

GIRLS IN SCIENCE & TECHNOLOGY



The NCA is more than just a building and it's more than just a school: it's a space for our students to develop, express themselves and be part of a community that's constantly evolving.

It's a place to showcase the best of our students and a platform for them to be the best they can.

We use the NCA building to host school and community events - as part of its brief as a community-centric venue - and student-led projects such as our Girls in Science and Technology Fair back in 2018.

Held to coincide with International Women's Day on March 8, a global event to honour the achievements of women around the world, this was an opportunity for our female STEM stars to shine.

And they certainly shone!

This show of Girl Power saw our female students take over the Academy to celebrate their achievements in science and technology - and mark the first year anniversary of the opening of the NCA.

Featuring projects, displays and demonstrations, our brightest STEM female students took centre stage, watched by a global audience as the event was streamed live on Facebook and other social media platforms.

In the audience at the NCA watching in person was none other than former Velcro Companies Chairman Robert Cripps and his wife, who had travelled from Australia to be guest of honor and see how the Academy was progressing 12 months after first opening its doors to CCF students.

It was a real thrill for the girls to have him there. The staff and CCF team were just as excited!

One of the fair's highlights was four generations of CCF women and girls speaking on stage about their experiences of schooling: from a CCF granny who never had a chance of an education to an 11-year-old CCF student who has been given the opportunity to learn and study STEM subjects.

This was followed by science-themed presentations from CCF students exploring topics such as engineering and coding. In the crowd were younger female CCF students and those still too young to attend school, being inspired to follow in the footsteps of those on stage. Interactive fun could be found at booths with activities such as LEGO robotics and Augmented Reality (AR).

Sponsored by Microsoft, the fair was part of the MSFT project, Make What's Next, which encouraged girls to enter tech and science fields.

Two years later, in 2020, we held our second Girls in Science and Technology event - this time with new partner TGB Charity, which invested in developing the quality of STEM education at the NCA.

A different crop of STEM girls stars - and hopefully part of a new generation of tech savvy young women in Cambodia - were in the spotlight this time.

The mix of experiments, demonstrations and interactive booths ensured it was also a success.

And once again, the event was streamed live on social media so CCF supporters around the world could join in and see firsthand our amazing girl STEM stars.

Showcasing our brilliant STEM education and the girls who are benefiting from it to a national and international audience gives an insight into the phenomenal work that we're doing here at the NCA.

IMPACT



Giving girls equality of education; the opportunity to not just attend school but have the best education possible opens up all sorts of possibilities for them.

We see a future in Cambodia where women are no longer underrepresented in sectors such as technology and sciences. They are entrepreneurs, creative-thinkers and change-makers in driving forward the growth of their country.

By investing in girls in STEM now, we hope that our CCF graduates will be among these future leading lights.

Instilling confidence in our girls and self-belief that they can achieve their dreams will empower them to strive for their goals - and a high quality education will equip them with the tools to make it happen.

Giving them the chance to step forward - often out of their comfort zone - and tell others about their talents is a learning experience, allowing them to develop life skills such as communication, decision-making, public speaking, teamwork and leadership.

Some of the girls say at the start that they are too shy to step up to the microphone or into the limelight. Watching their confidence flourish when they participate in these events is a joy to see.

There can be no greater proof that what we're doing at the NCA is working than seeing a young female CCF student, a girl from the most marginalized and impoverished communities in Cambodia, talk to a visitor about her passion for chemistry or robotics or coding, and her dream of one day becoming a leader in that field.

Rising to the challenge of events such as these fairs is character building and motivating.

Three girls who took part in the fairs have since won scholarships to Trinity College in Australia, an inspirational achievement for young CCF female students coming up behind them.

We're looking forward to seeing how our girl STEM stars make their mark on the world in the future.

"I had never spoken in public before. I was nervous but wanted to tell everyone about myself."

"When I am older, I would like to go to university and study maths. I would be the first in my family to go to university. I want to be a teacher and help others to learn. I am proud to be a girl. We can stand up and do well. We need to keep dreaming, to fly higher and reach new heights."

- **Theary**, CCF student, who aged 11 was one of the four speakers at the first Girls in Science and Technology Fair

NEW ZEALAND EMBASSY FUND PROJECTS



Support from the New Zealand Embassy, Bangkok, through the New Zealand Ministry of Foreign Affairs & Trade Aid Programme, enabled us to organize two student-led projects with the potential to make a wider impact in our communities.

These were:

- **Healthcare Awareness Messaging**
- **Waste Management System**

Healthcare Messaging

This challenged our young leaders to use all their knowledge and skills we've taught them to create a health awareness campaign for COVID prevention among our Steung Meanchey communities.

They were tasked with educating students and families on ways to protect themselves and reduce the risk of spreading the infection within their communities - all in an engaging and easy to understand way.

Their brief included everything from deciding which messages to include and how to convey these to a large audience. It was agreed that using video and presentations would be used to spread the word.

It would call on all their leadership and STEM skills to pull off.

Thankfully, our youth leaders were more than up for the challenge!

First of all, they needed to learn quite a bit about health. Specifically the transmission of disease and viruses and the role prevention plays in keeping people safe and disease-free. This would help them develop the awareness campaign and understand why the health messages they wanted to pass on to the community were so important.

They then had to storyboard those ideas and create short films, including working out locations to shoot and editing the footage, utilizing digital skills and understanding of technology and software.

15 CCF youth leadership students were trained on how to demonstrate the healthcare messages to the community. Three videos were filmed and edited.

Some of the students had final exams to contend with at the same time, and it's a testament to their commitment that they managed to juggle these with the healthcare project.

The videos were premiered at a community event attended by 164 people, facilitated by the leadership students, where demonstrations were held on hand washing techniques and the use of sanitizing gel.

2,000 students and their families in CCF communities also received hygiene packs.

TV screens were installed across CCF facilities and in communities to screen the healthcare videos made by the leadership students with messages about good hygiene practices and how to prevent the spread of COVID.

WHO guidelines on COVID prevention were handed out. With many community residents illiterate, the student leaders also held live demonstrations on the ground.

They even spent their spare time taking their healthcare messaging presentations to harder-to-reach communities who are not in direct contact with CCF.

We were very proud of their efforts to keep our communities safe and healthy.

IMPACT



This project impacted our students and CCF residents - and on different levels, making it a true community initiative.

Our communities have learned good hygiene practices, knowledge which can be shared with others to keep vulnerable children and families safe and healthy. Our CCF residents now understand COVID-19 symptoms and how to protect themselves from being infected.

Tackling these issues is especially important in impoverished communities where people are more prone to illness and suffering longer term health implications. Arming them with knowledge and awareness can reduce their risk of becoming ill and encourage better personal cleanliness for families and their children.

Giving our students responsibility for the initiative from start to finish - including conception and development - has given them real-time experience of project managing. Skills they are learning today can be applied in their future, equipping them with the tools to succeed in their chosen careers.

Delivering the project, to deadline, and overcoming obstacles (refining their problem solving abilities) demanded collaborative working to achieve a common aim, while accepting individual accountability.

It tests their decision making processes and ability to communicate effectively with those around them.

Other qualities such as resilience, patience, versatility and practical application of learned techniques were also challenged; attributes, which we went to imbue our young leaders with. Our vision is to see them grow into passionate, committed individuals with compassion for their community and others.

Encompassed disciplines from their STEM education, to media and digital skills, filming and editing videos, it pushed them to push themselves.

This project reflects CCF's ethos of producing well-rounded individuals, capable and adaptable, academically and personally gifted, with a good breadth of knowledge and the capacity to fulfill their potential.

"I'm so happy to be part of this project because it not only helps to develop the community but also myself. I've learnt so many skills, such as working as a team and technical things like using a camera and setting up for filming."

- Vanneit

"I feel it's such a huge accomplishment to be a part of something so meaningful. To be able to make such a huge impact on the community is beautiful because I could see the difference it made. I will keep this experience close to my heart."

- Seak Eng

Waste Management



Living around the former city dumpsite, our students are confronted with pollution and rubbish on a daily basis.

We incorporate this into their education. Students in our STEM clubs have looked at innovative ways to tackle waste and air pollution, such as recycling and clearing their neighbourhoods of waste.

We wanted to take this to another level. To take their ideas on paper and translate these into reality if possible.

The opportunity to do that arose in 2021 thanks to an earlier Grade 11 student project through Engineers Without Borders, a NGO working worldwide with disadvantaged communities.

Ideas from here sparked our Waste Management Community Project, one of our most ambitious student-led projects to date.

Our students took the lead in all aspects: from planning to implementation.

This involved them getting out on the ground with hands on work such as community surveys, workshops and video production.

But just as our students were getting into their stride, everything had to go on hold as the schools closed and our communities went into lockdown due to the global COVID pandemic.

We were only able to get the project up and running again once our students returned to the classroom in January 2021. Only for a more severe COVID outbreak a month later to force our communities back into lockdown.

Ongoing restrictions meant only one part of the waste management project could continue at CCF's new community, the all-female Girls to Grannies village. Students living here were able to work on the project without putting themselves at risk of infection.

It meant working on their own initiative with little supervision at times, apart from online instruction and communications.

Their aim was to overhaul the present system, which saw all rubbish taken to the village front gate - with organic waste thrown away - and left in bags to be collected by the city waste collection service.

Led by our STEM stars, Thy Rina, 17, the girls spoke to community members, identified their needs and measured all vegetable and organic waste from cooking.

The girls estimated that around 23kg of organic waste was produced a day at the Girls to Grannies village.

They then designed a recycling shed, where the organic waste could be stored rather than thrown away. Each house in the community was given a bin to collect their organic waste.

This gave rise to the black soldier fly offshoot project!

These flies are used to compost waste, which can then be turned into animal feed and sold, producing an income for the village.

It's hoped the black fly project can be expanded to include interested community members with the help of a local businesswoman, who delivered online mentoring in composting waste.

Who knew flies could be so engaging!

Community Improvement Project



An area of wasteland near to CCF's Neeson Cripps Academy clinic in Steung Meanchey was also going to be the focus of a student-led project under the umbrella of the waste management initiative.

The vision is to turn this neglected piece of land, strewn with rubbish, into a community space where our students can embrace nature and local residents can enjoy a tranquil setting to escape their often challenging lives.

More than 40 cubic meters of rubbish was removed from the area and taken away by the city refuse collection service.

Our students mapped out the area and worked out where a waste transfer shed could be located and the design.

This project was also disrupted by COVID but work was due to restart at the end of 2021/early 2022 once it's safe for our students to be on site.

When it's finished, it will become another outdoor classroom where our students can learn about real-world problems and have STEM lessons outside.

For instance, we've already identified FIVE different species of frog in the area, which the kids will be able to study! There are also lizards, birds and an abundance of other flora and fauna.

We envisage the space being used to host ongoing new clubs and curriculum study, bringing biology and chemistry out of the classroom and into nature.

Community members will be encouraged to come in, and relax or explore the area on a boardwalk.

There are also plans for a community garden for members to grow quality produce to sell, giving them a new income stream. Students have been involved in a competition to develop a logo and brand name.

The area will be for everyone to use. In spirit, a true community resource.

IMPACT



Both projects have empowered our students to turn their ideas into actions, so they gain the skills and confidence to be role models in their communities for positive change.

By giving our future leaders the tools they need to succeed, we are laying the foundation for a bright future and pathway out of the poverty they were born into.

The impact of these projects has a ripple effect, spreading out from our students into the community.

Our STEM Coordinator, Andrew Roberts, says the CCF students involved are taking away so many positives from the experiences. Students involved in the original Engineers Without Borders human centred design project, for example, learned that it is ok to fail. You can still learn, even if you don't succeed all the time. Developing a project is still an important learning process.

We don't want our students to simply study STEM subjects in a classroom. We want them to be immersed in the world around them, to learn outside where all their senses can be stimulated.

Alongside the waste management project, a student documentary team was capturing the process. While this was put on hold due to the pandemic, students had valuable time to practice their digital and video production skills.

On a practical level, the projects have helped clean up the Steung Meanchey area and educated residents on the importance of recycling and having pride in their neighbourhood.

The waste management system in the Girls to Grannies village, recycling organic waste, is already reaping rewards. We have managed to reduce the village's waste stream by a third. A great success!

We also see a great opportunity to teach students life and business skills such as budgeting with projects like the community garden and black soldier fly composting.

At CCF, we are leading the way in STEM education.

“I was involved with three parts of the project - engineering, agriculture and STEM sectors. I measured land and designed a proper place where our community can put rubbish. I also evaluated how to fertilize the land in order to grow vegetables. I am fascinated by agriculture the most, as I want to study an agricultural subject when I finish high school. I feel so fresh and relaxed whenever I am in a green environment.”

- Thy Rina, NCA student and project lead in the Girls to Grannies village waste management project

**THE NEESON
CRIPPS
ACADEMY
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IMPACT PROJECTS**

