

Zug, Switzerland

International School of Zug and Luzern

**How to become a zero waste and
zero carbon school**



**WORLD'S
BEST SCHOOL**
Environmental
Action

accenture



**WORLD'S
BEST SCHOOL
PRIZES**

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Introduction

The International School of Zug and Luzern or ISZL, is a school located in Zug, Switzerland, with a diverse school population of 1225 students from 65 different nationalities. The school holds diversity and sustainability close to its core values. The school has successfully integrated action-based projects which have had a profound impact on the local community, as well as various vulnerable communities around the world. Students have had the amazing opportunity of travelling to different locations around the world while offsetting their emissions through reforestation and other programs.

These trips opened learners' eyes and allowed them to identify communities across the globe that are in need of support. Through the numerous projects they created, they were able to create self-sufficient aquaponic systems for struggling fishing villages in Ghana, as well as help to build a school and library out of sustainable pep-bottle bricks. Learners have also created a solar panel system for another community in the Himalayas, and a reforestation program in Iceland. ISZL has created a culture at the school where students are able to conceptualise issues they wish to address and find the tools and support necessary to create a tangible, positive impact.



School Profile



Country:
Switzerland



Region:
Zug



School type:
Private school



Location area:
Semi dense area



Student population:
1001 to 1500



Prize Category:
Environmental Action



“We are a community of learners committed to making the world a better and kinder place. That word is really important to us: kinder. Not just kids but adults, parents, teachers, staff – we are really committed.”
-Barry Dequanne,
Principal



CONTEXT AND CHALLENGE

ISZL is a non-profit international school located in Zug in Switzerland, with 1,225 students representing 65 different nationalities ranging from ages 3 to 18. The school consists of two campuses, and both provide an ideal developmental fit for each assigned division of the school and present a unique set of future development opportunities. The neighbourhood surrounding ISZL's primary and middle schools is idyllic, with abundant natural scenery. The campus is mostly surrounded by farmland, grazing cattle and sheep, and a forest, resulting in a unique learning environment, particularly with respect to students' natural environments.

Meanwhile, the High School campus is located in a small town with easy access to public transportation. The local community is developing a long-term development vision for the area, and ISZL is seen as a vital and valued partner in the area's growth.

ISZL also owns a chalet in Wengen in the Swiss Alps used for school activities, such as student and staff retreats, personal development weeks, sports and outdoor activities, and environmental sustainability projects, as a few examples.

As an International Baccalaureate (IB) World School, ISZL is authorised by the IB Organisation to offer the Primary Years, Middle Years, IB Diploma and Career Pathways programs. The learning community builds a connected, inclusive, inspiring environment for students, parents, alumni, faculty and staff. It is a vibrant, multicultural, and caring community that fosters a deep sense of community wellbeing.

ISZL is seeking to become an environmentally sustainable school in all aspects and is well underway to achieving this.



The Humanities teacher at the school, Chris Koch, explains how the school's shifting paradigm was a success because of the students themselves. Koch expresses how "the real initiative and real push came from the kids. We merely created a culture where students feel comfortable to be". Project-based learning has become central at the school, with the curriculum modified to make room for project creation. Student-initiated and student-led projects have identified challenges across the school and have begun creating solutions. These projects range from working to achieve carbon neutrality by 2027 and shifting ISZL towards a zero-waste organisation, producing food with the aquaponics system, converting school transport from conventional to electric, and constructing a fully sustainable new campus. One of their most successful projects, The Carbon Fund Initiative, was the first project students decided to scale up.

The project gave students the experience of working alongside teaching and non-teaching staff to craft policies which will keep sustainability at the heart of ISZL life well into the future. The project became a huge learning experience, as students became aware of the types of legal restrictions they may come across.

Additionally, they were able to form relationships and open lines of communication with non-teaching staff who would otherwise be unaware of student activities. Some of these non-teaching members such as the Director of Advancement, Tanja Miserez-Alpers, and Director of Operations, Stefan Dittli, have since become deeply involved in the projects, providing support where teachers may be unable to.

The Carbon Fund initiative thus opened up the doors for students, who began proposing a wide range of environmental-related activities.



From here, they worked on improving their infrastructure, integrating their curriculum further and taking their projects to a global level. To add to this, ISZL's Director, Barry Dequanne, expresses "we are a community of learners committed to making the world a better and kinder place. That word is really important to us: kinder. Not just kids but adults, parents, teachers, and staff – we are really committed. Not just in our world but in our corner too, we recognize that the work needs to start in our backyard and ourselves. It's also about changing words into action".







“The awareness of sustainability is always an integral part of education here. Every subject I’ve had has had a unit on human impact on the surrounding environment. Having that as a focal point is part of what helps us to get other students interested in taking part.”

-Margo, student at ISZL



EXPERTISE AND APPROACH

A central focus of ISZL is on project-based learning and a service learning program where students between grades 9 and 12 must complete a certain amount of time within a service initiative each year. While not compulsory, middle and primary school campuses also provide students with service opportunities. Learners are given the opportunity to choose from a variety of fascinating initiatives, creating groups to address different themes such as zero carbon, zero waste or aquaponics. They are given time slots specifically dedicated to working on their projects. Many subjects also integrate skills and knowledge students may need when conducting research and putting together initiatives.

ISZL's first steps towards project-based learning developed organically in response to student-inspired initiatives such as Youth Forum Switzerland (YFS). The forum was set up in 2018 after students heard leaders speak on Sustainability at the World Economic Forum, finding that there were very few young people present. They invited prestigious speakers from the World Economic Forum to the school, who inspired the students, listened to their ideas and pleas, and collaborated to find areas around the world where they could help. What began as a conference has developed into a program that is a leader in educational innovation, and has successfully played out in both in-person and virtual spheres of education.

Two powerful student initiatives stemming from YFS are the Zero Carbon and Waste groups that work to make ISZL a net-zero carbon school and a zero-waste organisation. These projects originated from YFS to take action on the dialogue from the forum, allowing students to turn words into projects and projects into action.



The Zero Carbon group has played a significant role in making carbon neutrality part of ISZL's way of life, meaning that the school vows to become carbon-neutral by 2027. Once they opened the door, students began proposing a wide range of environmental and related initiatives. However, they quickly realised that despite the goodwill and enthusiasm of teachers and administrators alike, the school's infrastructure was not optimally designed to support these kinds of projects, particularly as students move from the primary level into middle and high school. Today, infrastructure at the primary and middle levels (staffing, scheduling, budgeting, etc.) is intentionally designed to support project-based and inquiry-based learning. However, as students move through into high school, the curriculum and infrastructure shift to prioritise the more specialised courses that the students will need to apply to university (biology, physics, history, etc.). While there is time in the schedule for Community, Action, and Service (CAS) activities throughout the year, their challenge is to help students connect these activities to their classes and lives outside of school.

High School student Margo says “my entire experience at this school, I've always heard about initiatives and goals to become more sustainable. School-based events are all zero waste events, we even created a handbook that the school population follows to ensure everyone stays on track with our values and mission... awareness of sustainability is always an integral part of our education here. Every subject taught has a unit on the human impact on our surrounding environment. This focal point really helps students to become interested in taking part in our projects”. Another student, Mathis, is part of the aquaponics group, and adds to Margo's words: “what's incredible is the flexibility with what we can do”. Initiatives will generally last two years so students can see an evolution but at the same time, service groups are constantly changing.



Mathis mentions how ISZL has its own platform where students are interviewed, sharing and teaching others about the projects they have embarked on. Students also have Personal World Development Week (PWDS) trips, where they are given the chance to visit and work on their projects in the communities they are working with. These trips are carbon neutral and negative and have taken students on projects such as installing solar panels in a remote village in the Himalayas and India, helping source and create rocket stoves in Nepal, co-creating a massive reforestation program in Iceland, creating a self-sufficient aquaponics system in a community in Ghana, as well as helping build a library and school out of pep-bottle bricks.

Through exposure to speakers on the YFS, ISZL turned their 10-year partnership with a community in Ghana, into an active collaborative project. Where they had previously been providing fundraising, ISZL began exploring the types of issues faced by the Ghanaian communities and how they could help solve them. This is how they developed the Twin Aquaponics Systems in Switzerland and Ghana. ISZL explored a fishing community in Ghana, which was struggling with the ever-decreasing levels of fish they could find over the years. Students visited the community, getting to know the fishermen personally, in order to see the issues they were facing. The community has increasingly struggled with shortages of fish stock. The farmers understood the fish markets, the only thing missing was the fish. Learners came up with the idea of creating a self-sufficient aquaponics system, which could provide the community with fish raised on land. The project had people from across five different grades and nationalities, which ISZL's student Mathis found very interesting. These students coming from diverse backgrounds and age groups were able to communicate and share different perspectives and world views, helping to enrich the project.



Over time, the project turned into a partnership and today, students and community members work together to ensure the project's longevity.

Currently, students are given one hour each week to work on independent and team service projects at the high school. Spread over the year, this provides approximately 35 hours of school time to meet in teams and do this work, a meaningful amount of time. In practice, however, it is difficult for students to enter and maintain “flow” as they work. For instance, a team that is prototyping a biochar kiln for their school garden might require 30 minutes of each hour to set up and clean up their workspace, leaving only 30 minutes of actual focused work time. Similarly, they've learned that their approval and budgeting processes and timelines also create unintentional barriers for students. In the past, students did not know which administrators needed to approve aspects of their work. Coordinating the approvals they needed for their projects took many weeks of high-level leadership meetings throughout the school. While the students' projects were ultimately approved, the staff also learned that the students are often working on different timelines than the administrators. Therefore, they decided to address this challenge by setting up a new “ISZL Sustainability Committee” across all campuses, including students, teachers, parents, and leadership team members to fast-track approval for student projects.





A group of students is working in a garden bed. One student in the center is using a shovel to move soil into a black wheelbarrow. Other students are visible around the garden bed, some wearing face masks. The background shows a modern building with large glass windows and wooden siding.

“We had people across five different grades and nationalities. It is interesting to see everyone’s diverse perspectives”

- Mathis, student at ISZL



OUTCOMES AND RESULTS

Project Impacts

The ISZL's Twin Aquaponic System project with Ghana began as a small-scale aquaponics system on campus which was used as a laboratory and model for the large system, the school is helping to construct in Kokrobite, Ghana. That system would produce 20 tons of fish and 50 tons of vegetables annually, also providing food, work and education to the local community. The school's aquaponics model provides many possible learning experiences and is an important opportunity for a hands-on service project with tangible impact. Meanwhile, since its inception, The Youth Forum Switzerland Team has reached out beyond ISZL, creating networks of student changemakers that exceed 400 individuals, and more than 50 schools from around the world have participated in YFS events.

From 2018 to 2020, ISZL hosted three successful in-person events that received overwhelmingly positive feedback from students, staff and speakers attending.

This positive reaction is evident by the number of students wanting to participate in organising YFS, growing from the initial 3 students to over 85 this year with the number of schools attending increasing from 8 to 23 in 2020. At their last event, 800 students from 24 schools (including ISZL) attended and heard 34 speakers from around the world, many of whom spoke at the World Economic Forum the following week. For ISZL students, the chance to engage face-to-face with people in the fields they hope to work in one day is life-changing. Many speakers advise students that they shouldn't wait until after university to change the world - they should start now. Many students take that advice to heart and begin projects of their own.



Going further

In addition, the Zero Carbon group recently launched a community website for The Carbon Fund for members to offset their emissions through donations that support student projects. The Zero Waste group works locally to ensure minimal waste production and has acquired a composting machine to turn lunchroom waste into valuable composting. This is being implemented as an official school policy. Beyond this, their Reforestation program in Iceland resulted in students planting over 34,000 trees in eight days for the Icelandic Forest Service, stabilising soil and removing approximately 17,000 tons of carbon from the atmosphere over the next 50 years.

Later, students began to conceptualise how to create cheap, accessible building materials to improve the infrastructure in the Ghanaian community. With the support and help from the discussions

in the Youth Forum Switzerland, the students began creating Pep-bottle bricks which were already being used for water tanks. Together, students and community members built a school and a communal library from 25 000 pep bottles. Koch expresses how “the whole community and kids made these bricks together and the library is now the most beautiful building in the community”.

Lastly, in their Global Innovations classes, students study Cradle-to-Cradle design products and write business plans based on those principles. For example, a student designed a new fabric for a biodegradable bikini last year in partnership with a fabric mill here in Switzerland. She is now pursuing that swimwear line as a business while she attends university. These are some of many other stories which demonstrate the multi-scaled and widespread impact these projects have had.



Key Steps



ADDRESSING THE EARLY YEARS

The first important step the school took in developing this expertise was to bring in a pioneering teacher and administrator named Ann Van Dam to develop their Early Years program. Similar to Montessori and Emilia Reggio's models in education, Ann believes that young children should guide their own learning. Students spend the majority of their time outdoors in structured play and learning according to their own interests. The school's surroundings close to working farms and forests give their youngest students opportunities to spend hours in the woods and the fields, making discoveries and asking questions about the world around them. This work has resulted in a well-established, renowned forest learning program that leads to nurturing connections to nature and an understanding of the interconnectedness with their local ecosystem.





EXPOSURE TO PDW TRIPS

The second significant step taken in pushing ISZL towards the right direction was connecting the Personal Development Week (PDW) and service projects. PDW was formerly a once-yearly, one-week trip that commenced and ended in that short time frame. To make the impact of those trips more lasting on both the students and the locations to which they were travelling, they were connected to the service program which runs weekly. Now students have been given some time to work on local and international projects, extending the PDW timeframe and enabling more to come from it. PDW trips begin in Grade 3, culminating in service programs abroad in grade 11. An example of one of these projects was installing solar panels in remote Himalayan villages - Students travel to extremely remote villages and install plug-and-play solar systems in places that have never seen artificial light before.



CREATING A SERVICE-LEARNING PROGRAM

In Middle School, much of the energy for environmental topics comes from the student initiatives in their service-learning program.



They have environmental service-learning groups in each of the three grades, and the student-led initiatives include: - Improving recycling opportunities across campus and educating MS students about recycling (including reducing paper use amongst the students). - Cultivating plants in the student garden area and composting. - Organising an indoor plant growing competition amongst homerooms. - Sponsoring an animal through the World Wildlife fund by homeroom. Creating an environmental art contest to represent beauty and environmental threats via art. Reusing PET bottles in 3D printers. They also have an afterschool Swiss Young Naturalist Tournament club to prepare students to participate in that program. And lastly, along the lines of helping to instil a love for the environment in their students, they regularly have PHE and PD classes outdoors in the forest.



THE YOUTH FORUM SWITZERLAND

As noted above, Youth Forum Switzerland has become one of the primary generators of new project initiatives and ideas for students. YFS was started by three of its students who attended the Davos Open Forum (part of the World Economic Forum - WEF) on a school trip in 2015. They noted there were very few young people in Davos, so they began reaching out to WEF speakers to see if they would be willing to present to their school.



Several agreed, and the program began to grow organically. Students work on the event all year, and all events are planned and moderated by students.



INTRODUCING INNOVATION CLASSES

Many of the initiatives that YFS and PDWs inspired were simply too ambitious to squeeze into the hour they have built into their schedule each week for service work. So in 2016, they created a series of courses in the school that they call “Innovations” classes. These are two-year classes that provide students with the space and support they need to pursue their own passion projects under the guidance of a mentor. For example, a student in English Innovations might choose to write a novel or produce a documentary film, while a student in Science Innovations might use mycelium to create a biodegradable frame to make Covid masks more comfortable to wear. In Global Innovations, students study Cradle-to-Cradle design products and write business plans based on those principles.



STARTING A SUSTAINABILITY COMMITTEE

The “Sustainability Committee” includes leadership team members, staff, parents, and students.

This committee aims to provide a “one-stop shop” for students who want to propose ambitious projects at the school, like their Zero Carbon and Zero Waste teams. In addition, this committee helps students identify key stakeholders, navigate the approval process, apply for funding, and identify experts in the larger school and business community who might be able to support or mentor them. This year, ISZL also began a multi-year construction project on the primary campus. The Sustainability Committee is using this project as an opportunity to engage students and other community stakeholders in that work. The first student initiative for that campus is a plan to electrify a fleet of 55 school buses and provide on-site charging stations for buses, staff, and parents. Students also plan to talk with architects about zero carbon and zero waste design principles, and feel encouraged to propose additional project ideas.





Advice and Guidance

The students at ISZL advise that, in order to foster an environment such as the one they have built at their school, it all starts with having conversations between teachers, students and non-teaching staff, and setting up a facility that allows students to get the help they need to move their projects forward. Learners should speak to classmates and community members about these types of projects, even if they aren't too involved in sustainability issues. The school's actions in themselves act as a piece of advice: in handing over the baton to students, an entire cascade of impressive and momentous projects has come to fruition with tangible, momentous results that have had a global impact.

More information

 <https://www.iszl.ch>

 [@iszl.ch](https://www.facebook.com/iszl.ch)

 [International School of Zug and Luzern](https://www.linkedin.com/company/international-school-of-zug-and-luzern)

 [ISZL Community](https://www.youtube.com/channel/UC...)

 [@ISZL](https://twitter.com/ISZL)

 [@iszlofficial](https://www.instagram.com/iszlofficial)

Download the [ISZL Carbon Footprint Report](#)

Watch the [school's video](#)

