RIO 2016 OLYMPIC GAMES SUSTAINABILITY AND LEGACY STORIES

A Selection of Good Practices
“Abraça Rio 2016” is the logo introduced by the Rio 2016 Olympic and Paralympic Games Organizing Committee for use in all Games communications related to its Sustainability Programme. The name “Abraça” (embrace) and the colour blue were chosen to inspire the promotion of responsible behaviour - with people and planet - and building a more prosperous future.
The Rio 2016 Summer Olympic and Paralympic Games inserted sustainability into their DNA from the very beginning. However, for the wider public, it remains difficult to understand how sustainable sport events work in practice.

“A sport is sustainable when it meets the needs of today’s sports community while contributing to the improvement of future sport opportunities for all and the improvement of the integrity of the natural and social environment on which it depends.”

David Chemushenko, Sustainability expert and author

This booklet outlines several initiatives that seek to engage the wider audience on sustainability and legacy. It contains easy-to-understand, positive stories that were collected by the AISTS during the Games. Leaving aside the complexity and challenges of organising Olympic Games for a moment, it puts the spotlight on examples that show the concrete positive impact of the Games.

Stories like these are often hidden and of a small scale. By bringing them out in the public we strive to make them known publicly and to serve as source of inspiration for future Olympic Games.

Tania BRAGA
Sustainability, Accessibility and Legacy Head, Rio 2016 Olympic and Paralympic Games Organising Committee

Geert HENDRIKS
Head of Projects, International Academy of Sports Science and Technology (AISTS)
The Project

Since 2012, the NOC of the Netherlands (NOC*NSF) has worked with Olympic and Paralympic athletes to support the recently created GEO-schools in Rio de Janeiro. Approximately 1,500 children from the age of 12 – 15 are part of the city's Olympic Experimental Schools (Ginásio Experimental Olimpico or GEO schools).

There are four GEO schools in Rio de Janeiro, located at the edges of city's slums or favelas. GEO schools are unique in Brazil as the children can practice between 1.5 and 3 hours of sport per day, have classes all day long, and receive free meals. GEO schools differ from regular schools in Rio, which have 1 or 2 hours of sports per week and are limited to 4 hours of class per day.

A variety of Dutch Olympic and Paralympic athletes conducted sport clinics at the GEO schools to educate the children about the Olympic Values and the use of sport to deal with both hardship and success. The visiting athletes also trained together with the children and gave advice on sports such as: swimming, judo, track and field, etc.
The Story

Hinkelien Schreuder experienced the power of Olympism through her involvement in the programme. Schreuder won the Olympic gold and bronze medal in the 4x100 freestyle relay at the Olympics in Beijing (2008) and London (2012) respectively and is a former world record holder in the 100-meter individual medley.
Schreuder visited all GEO schools and went beyond the sport clinics, as she also shared her experience with the schools’ physical education teachers. The clinics revealed an eagerness in the children to learn and demonstrated the opportunity sport has to help children improve their intellectual skills.

“A young boy told me he was often bullied in class. Since he started to play sport, he felt more confident and his school results became much better than ever before.”

Hinkelien Schreuder, Olympic gold and bronze medallist

One of the Paralympic athletes that visited the GEO schools was Marlou van Rhijn who successfully defended her gold medals at the 100 and 200 meter athletics from London, at the Paralympics in Rio. Van Rhijn, who was born without lower legs is also known as the “Blade-babe” and runs with the aid of artificial limbs.

Upon arriving at the school, she was surprised by the level of knowledge of Paralympic sports amongst the children. Most important to Van Rhijn was to ensure that the children enjoyed playing sports irrespective of the situation they were in.

“Normally when I go in to a school with little kids, they are sometimes afraid of seeing someone putting on running blades, but these kids knew what blades were and they really enjoyed doing sports.”

Marlou van Rhijn, Paralympic Gold medallist
Despite the enthusiasm of the children, Van Rhijn was faced with emotional moments during her visit. One of them, she recalls, was when a girl was telling her story and said:

“Now I know that even if something looks impossible, such as running without legs, it still can be possible.”

GEO-school student
The GEO project did not only engage with Olympic sports. A delegation of world-class korfball players went in October 2014 to Rio de Janeiro. Korfball is a team-sport that is played in more than 60 countries across the world. The sport differentiates itself from others by being a truly mixed sport, a team always consists of an equal number of men and women. As such, the sport taught the children an important message on gender equality.

**The Result**

Some of the children from the GEO schools stay in touch with the athletes via Facebook and continue to ask questions about their sports performance, dreams, or other topics.

During the Games, the GEO project was formally handed-over to the Rio city authorities during a celebratory gathering of children, athletes, and officials in the Holland House. The engagement of a National Olympic Committee and athletes in the pilot with GEO schools was an argument for the city’s minister of sport to continue with the pilot and increase the number of schools. In the meantime, the NOC*NSF has started conversations with Tokyo to explore how Dutch athletes can support the local education system in a similar way in the run up to the Tokyo 2020 Olympic and Paralympic Games.
**HANDBALL – FUTURE ARENA**

**The Project**

The Future Arena, venue for the handball and goalball events at Rio 2016, was the first “nomadic architecture” venue in the history of the Games. The concept was to create a venue that could not only be reused for future events, but also be utilized for other purposes and help leave a lasting legacy for the people of Rio. The fulfilment of this vision will see the Future Arena being converted into four new public schools for 2,000 young pupils in Rio, after the Paralympic Games.

> “A first for the Olympics, the venue will make use of an innovative technique called ‘nomadic architecture’, thus ensuring that even a temporary structure can leave a lasting legacy”
> AndArchitects

**The Story**

Local studios Oficina de Arquitetos and Lopes, Santos & Ferreira Gomes worked with UK firm AndArchitects to create the 12,000-seat Future Arena. It had been built in the
Olympic Park in Barra de Tijuca and had been hosting events since 29th April 2016. Post the Paralympics Games, the venue will be dismantled and rebuilt as four schools – three of them in Barra and Jararepagua, and one in São Cristovão close to Maracanã.
This 35,000 square meter “nomad” building could house 12,000 people and had been made of multiple prefabricated pieces. The box-shaped stadium was enveloped by rain-screens, which are made from horizontal wooden slats and punctured by letterbox-like openings. The main sections of the building will form the basic structural elements for the schools. The stairs, accessible ramps, rain-screens, steel elements and concrete circulation will be moved and reused for the schools. The frontage modular panels, the roofs and the floor were also designed with the future use in the schools in mind.

The Result

The Future Arena is the first-of-its-kind sport venue that will strive to prove that even temporary venues can be used to leave a lasting legacy after the Games. The dismantling and conversion into four public schools for 500 students each, will provide the 2,000 children a modern educational establishment for years to come, with a notably distinct architecture. The stadium and the schools had been designed simultaneously to ensure maximal reutilization of the materials and to have the best fit in terms of design for Games and post-Games use.

“Legacy does not just happen; it needs to be created. The innovative solution of transforming the Future Arena into four schools required creativity and smart designing efforts, from the very start of the project”

*Tania Braga, Sustainability, Accessibility and Legacy Head, Rio 2016*
As a ground-breaking innovation in Games venue and infrastructure, the Future Arena could potentially lead the path for similar architectural marvels in the future which will not only provide the setting for memorable events, but last long in the memory of natives of the host cities as tangible legacy.

Goalball at the Rio Paralympics 2016 inside the Future Arena
The Project

The Rio 2016 Organizing Committee and the International Golf Federation joined forces during the Rio 2016 Olympic Games to bring environmental education and awareness to the forefront of the Golf event through walking tours across the Olympic Golf Course for spectators and media. The AISTS organized one such 45-minute tour for members of the National Olympic Committees (NOCs) and cities. Engaging the NOCs and past and/or future host cities in a sustainability drive was one of the main aims of the tour, with the hope of inspiring them for future initiatives. The tour was structured to focus on the sustainable actions and environmental aspects of the golf course, which is one of the most unique courses in the world.

The Story

The sheer expanse of a regular golf course could lead people into believing that the flora and fauna of a significant area of land is always affected in the process of creating and maintaining the course. Contrary to this popular belief, the native flora and fauna of the area was retained or transplanted inside the course and even some new native vegetation was introduced, as illustrated during the tour. Participants could witness birds and small animals trotting around the course freely. There was a fence around
the course to prevent bigger animals from entering it; a fence that would be removed after the Olympics.

Brazil is known for having great diversity in its plant and animal species and the tour participants received first-hand experience of this. There was no shortage of sloths and capybaras (the world’s largest rodent) in plain sight. The area contained a host of natural sandbanks with small bush like vegetation inhabited by owl families – a common feature of deteriorated rain forests. As the participants continued on the

Tour coordinator Ricardo kept the group engaged with his exceptional knowledge of the Brazilian flora and fauna
“awareness on foot” tour, they were introduced to various varieties of plants, the most fascinating of which was the camboata tree. Nicknamed the “thin stick”, tea made from the leaves of this plant does exactly that – make one slim.

The course included a couple of natural lagoons, one of which was inhabited by an alligator like animal known as caiman. The caimans, which can measure up to 4 meters, are considered endangered and despite having a sinister look about them, are “protected by law”. The original native vegetation comprising of crawling vegetation, turfs, bushes and small trees left ample space for free movement of the
wind, another distinguishing feature of the course. In fact, the course, in many ways, resembled much of a traditional golf course in Scotland – the birthplace of golf.

“We wanted to make sure that the debut for Olympic Golf was remembered for all the right reasons and the tour was important to show people how well we had done to preserve the flora and fauna, and create an environment of harmonious coexistence. It’s not every day that you tee-off under the watchful eye of a capybara!”

Antony Scanlon, Executive Director, International Golf Federation

The Result

The one-of-its-kind sustainability initiative not only brought to light the diverse flora and fauna of the region but also addressed other Rio 2016 sustainability projects like the solar energy recharge station and the waste management programme. The course, in itself, was regarded as being unique and will potentially make the bucket list for golf professionals and followers around the globe. The tour helped to associate golf with environmental protection and generated positive media to counter some of the open questions of concern surrounding the Olympics. It also provided a unique experience for the media and spectators, and although being very different from other sustainability initiatives, it addressed the fundamental point of all sustainability drives – “awareness leads to action, and action leads to change.”
TOKYO 2020 JAPAN HOUSE – RESOURCE EFFICIENCY

The Project

Japan is often perceived as the land of innovation, mostly from the perspective of technology. At the Rio 2016 Olympic Games, the Tokyo 2020 Japan House took innovation down to its simplest form – finding ways to effectively utilise everyday resources for everyday activities. The sustainability drive initiated by the Tokyo 2020 Japan House can be aptly titled – “Less is More”. Throughout the Olympic Games, the Tokyo 2020 Japan House endeavoured to reduce and reuse resources for daily requirements like meals, electricity, furniture, etcetera and none of these involved utilisation of high-end technology, only smart thinking and a will to make the Olympic Games more sustainable. The initiatives from the Tokyo 2020 Japan House are a good step in the right direction leading up to Tokyo 2020.

The Story

The efforts to utilise resources more efficiently originated in the House itself. All the trusses and panels used for the booths and warehouses were leased from local contractors. Also, the materials for the floor-lifting were reusable. The interior design
of the House employed materials used by local contractors for previous decorating purposes and the partitions and signage were all reusable. Even the furniture inside was sourced from previous establishments. The House also strived to reduce electricity usage by installing energy-saving hot water dispensers to cook meals and LED bulbs for lighting. Moreover, part of the House was actually outdoors to make the best use of ample sunlight provided by Rio.

Every major event involves a gargantuan amount of food and the Tokyo 2020 Japan House identified that this area always leads to a lot of waste in terms of dishes and
cutlery. Thus the House insisted on using reusable dishes and cutlery at the reception and hospitality room where about 100 meals were served per day. To counter food waste issues, the House tried to have appropriate order management to closely estimate the amount of food required. The food itself was served buffet-style so that there was a higher chance of people finishing what they put on their own plate.

In terms of logistics, the Japanese Olympic Committee pushed for purchasing their products from Brazil, and only products unavailable in Brazil were transported from
Japan. Additionally, packaging of fragile items was done in the smartest way by using blankets to wrap the items instead of complex packaging materials.

“Smart use of every-day resources helped us save money and be sustainable at the same time. As the hosts of the next Olympics, it was important that we lay down a marker at Rio and I believe we did that, in simple yet efficient ways.”

Kenichiro Nakajo, Tokyo 2020 Director of Sustainability Engagement

The Result

Although these are apparently simple measures, they ended up helping the Japan NOC save money on purchasing new materials of equivalent to 235 partitions, 76 signs, 335 desks, 1,036 chairs and 5 refrigerators! It could have also encouraged the local contractors to employ more reusable resources for their own projects. Despite not having relevant figures available, it could be safely assumed that the initiatives helped save electricity and purchasing and packaging costs. It is also encouraging to see an NOC striving to reduce wastage of food, dishes and cutlery. The biggest takeaway from the initiative is, hopefully, a change in perception – sustainability is not rocket science, it is simply about keeping it smart, simple, and efficient. Currently exploring the possibility to re-use e-waste for the production of the medals, indicates that the country continues to pursue an innovative approach in their preparations for Tokyo 2020.
RUGBY - IMPACT BEYOND RIO 2016

The Project

In order to ensure a lasting impact beyond the return of rugby at the Rio 2016 Olympic Games, all the rugby unions around the world had been encouraged to organise activities alongside and in relation to the Olympics to promote the Game and attract new players and fans. Globally, more than 200 events were organised by 85 different countries. Many rugby unions in Africa continue to organise events that not only promote the sport but also the Olympic Values. The union of Burundi cleaned the lake banks followed by a rugby beach tournament.

"Before a ball has even been kicked at Rio 2016, the effect of the Olympic Games on Brazilian rugby has already been positive."

Bill Beaumont, World Rugby Chairman

The Brazilian Rugby Federation coordinated the IMPACT Beyond Rio 2016 programme in Rio de Janeiro in collaboration with World Rugby, the Brazil National
Olympic Committee, the City of Rio and the Rio 2016 Organising Committee. Since its launch in March 2015, it has already engaged more than 175,000 players, coaches and match officials. For reference, the Brazilian Rugby Union counted only 5,400 registered players in Brazil (IRB website, 2014).

**The Story**

![Rugby clinic at Fan Zones during Rio 2016 Olympic Games](image)

A Fan Zone measuring 350m² was set-up right at the entrance of the Deodoro Olympic Park during the entire Olympic rugby competition to build-up momentum for the fans and grow the rugby awareness of the Olympics spectators.
An inflatable pitch for touch rugby as well as inflatable posts for kicking and throwing contests attracted more than 1,000 attendees per day. Furthermore, the 15 trained staff organized tackling workshops and specific games for children. The inflatable posts, balls, remaining giveaways and rugby gear have been donated, after the Games, to the Brazilian Rugby Union (CBRU) to support the further development of rugby in Brazil.

After having obtained the 7th place in Rio, Patricia Garcia, centre of the Spanish women’s national rugby sevens team, contributed to the IMPACT Beyond Rio 2016 by leading a clinic on the Ipanema Beach.

Some of the rugby equipment and gear from Rio continued to be used for Patricia Garcia’s project to further promote rugby and its values in South and Central America.

“A fabulous opportunity for me to share rugby as a way of life and empower all kinds of people, from young people living in the favelas of Rio de Janeiro and prisoners from the prison in Punta Arenas, to working with passionate coaches and over 1,000 Chileans during the Rugby Libre tour; all of which was a way to improve society by educating through values such as respect, resilience and teamwork”

Patricia Garcia, Spanish women’s national rugby 7s team
This reflected similar acts of solidarity whereby World Rugby and the rugby family have donated unwanted but good quality equipment to SOS Kit Aid (soskitaid.com) who redistribute the gear to national federations worldwide, equipping children and supporting rugby at the grassroots level.

Children in Swaziland with SOS Kit Aid donations

The Future

The Rugby World Cup 2019 will be hosted by Japan in the year prior to the Tokyo 2020 Olympic Games. World Rugby has already started the IMPACT Beyond RWC2019 programme, involving in particular, the 12 host cities of the Rugby World Cup. In parallel it has started the Project Asia 1 Million (A1M) programme, aiming to bring about a million new rugby players in Asia. Both programmes will support the development of the IMPACT Beyond Tokyo2020 programme.
The Project

Twenty-seven selected EY professionals from the Americas (10), Belgium, the Netherlands (14) and Rio (3), stepped into Rio to do what they do best and support the local communities. The professionals, selected across a range of competencies, helped six local NGOs with advisory and transactional services on a pro bono basis.

“I witnessed myself that the OLVP program has made a clear difference for the NGOs. It makes me proud and thankful to be a part of it. A very inspiring experience with legendary moments; a clear legacy for me.”

Jan Peter Sigmond, Senior, Advisory – Amsterdam, EY Netherlands

During the Olympics, the EY professionals, as part of their Olympic Legacy Volunteer Programme (OLVP), went to Rio to work with the NGOs, implement their projects and
visit the Games. Through their Olympic sponsorship, EY wanted to help create a legacy for Brazil and leave behind a better working world for future generations.

The projects with the six NGOs covered a range of different topics such as budget, growth planning, maturity assessments, balanced score cards, and funding strategies. Some of these projects were consciously made replicable across NGOs and there was a knowledge sharing session at the EY office in Rio to optimize the benefits of the project.
The NGOs and the Assignments

**Rede Asta**
Rede Asta is committed to reducing social inequality in Brazil by empowering female artisans from low-income communities, providing them with training, networks and access to the market. EY helped them set up budget framework for creating better access to market and increasing sales.

**Observatório de Favelas**
To assist this NPO which develops initiatives, projects and public policy aimed at overcoming social inequalities in low-income communities, EY helped create knowledge sharing platforms within communities and a network to support development of locally sourced knowledge. Additionally, EY supported them in developing a strategic plan.

**Instituto da Criança**
The Instituto da Criança is a NPO that supports social initiatives and conducts educational programs in low-income communities in Rio de Janeiro. The fast-growing NPO needed a system to measure their processes and EY promptly stepped in to...
design a balance scorecard for them to increase effectiveness of their activities and to identify ways of gauging success.

“You have no idea how participating in the OLVP was important for the Instituto da Criança and how rich the obtained results and interactions we had were. A unique opportunity, which in itself already left us with a beautiful legacy.”

Pedro Werneck, President, Instituto da Criança

CIEDS
The CIEDS strives to promote more effective public policies and strategic social investment in four main areas of focus: Education and Citizenship; Inclusion and Welfare; Integrated Development; and Entrepreneurship and Community Development. To assist them in their endeavours, EY created a KPI scoreboard to help CIEDS compare between national projects and measure their impacts.

Fundação Gol de Letra
This NPO, which provides educational programs for children and adolescents in socially vulnerable communities, guarantees that contributions from sponsors are used exclusively for the projects, so that the children profit. The NGO needed to use sport as a social inclusion tool and find out ways to cover costs which are not directly linked to the projects. EY stepped up to create a funding strategy for them to help them with financial analysis and alternative financial sourcing.
Viva Rio

Viva Rio mainly works to support social initiatives and develop public policies to benefit low income communities in Rio de Janeiro through promotion of peace and social inclusion. As an NGO experiencing strong growth, they find themselves becoming a government arm and are feeling the negative effects of the same. They sought help from EY to conduct a maturity assessment, gap analysis and find ways to handle sudden growth and issues stemming from it.

The Result

Although it is too early to measure the results of EYs contribution, it can be said that the NGOs directly benefited from expertise and consulting services that they normally would not be able to afford, which will undoubtedly have a benefit on the NGOs and in turn in the local communities. The biggest benefit was to receive the tools and advice from a consulting service that they normally would not be able to afford.

This was the first time EY had a volunteer programme where EY professionals volunteered remotely for three months. Tied into Olympic sponsorship agreement, EY were able to activate their Olympic sponsorship, and have a meaningful impact in the local communities.
TABLE TENNIS – PAPERLESS VENUE

The Project

Innovation played a key role at the Rio 2016 Table Tennis test-event in November 2015. One concept put on trial was to have the venue become paperless. During the test-event, organisers went around daily to meet with event stakeholders and discuss how to further reduce printing.

Later, during the Rio 2016 Olympic Games, the sport management team of the Riocentro Pavilion 3, which hosted the table tennis competition, no longer provided printed documents to each individual NOC, media representative and technical official. Instead, one copy of the documents (e.g. match results, updated draws, general information, etcetera) was made available at a few places such as the Sport Information Desk, Athletes’ Lounge and ITTF (International Table Tennis Federation) office.

The usual printed versions of the documents were all made available digitally by the venue results operating team. Results, schedules and background information was available digitally in MyInfo+ and the Olympic News Service.
The Story

Given the 56 participating NOCs (National Olympic Committees), the venue would normally have to make approximately 100 copies of each document. During the Rio 2016 Games, this was reduced to five copies of each document.
Combined efforts of the ITTF and the Sport Management Team aimed to change the habit of athletes, coaches and team leaders to rely on digitally available information and no longer on printed copies. Athletes, coaches and others also often captured the content of a document by taking a photo of it, instead of requesting a printed version.
Under normal conditions, an estimate of 1,000 pages would be printed per day during the Rio 2016 Olympic Games Table Tennis event. During 12 days of table tennis competition, this would result in approximately 12,000 printed pages. Due to their innovative approach and strong collaboration with the International Federation (ITTF), that supported the idea of reducing the printed results distribution since the beginning, the venue was able to reduce this number by an estimate of 95%.

“For economic efficiency reasons, we had to rethink our existing processes. We discovered that breaking the habit of printing everything was a significant cost and time saver for the venue.”

Carlos León, Table Tennis Sport Manager, Rio 2016 Organising Committee

The Result

Besides saving the costs of printing 12,000 pages, the venue significantly reduced its need for printers and in the end only purchased two printers for the entire sport management team in the venue instead of the expected five printers. Furthermore, feedback from event stakeholders has been very positive as they have easy real-time access to the information instead of having to wait at the venue for a printed copy.
HOUSE OF SWITZERLAND – LOCAL BASEBALL CLUB

The Project

The House of Switzerland created and managed by Présence Suisse is a small piece of Switzerland located in Lagoa Rodrigo de Freitas. Open to public, the house, named by the Cariocas as Baixo Suiça – a cool place where you meet friends and spend time together – was the perfect location to celebrate sport during the Olympic and Paralympic Games. Based on a baseball pitch that has been lent by the city of Rio, the House of Switzerland will renovate the pitch and support the local club.

The Story

The House of Switzerland is a sustainable and transportable house. Made of wood, steel and tempered glass, the house was built by a team of six persons that put together the 1,100 prefabricated pieces. Local workers took care of all the details and adjustments.

Located on the Baseball pitch of the local club, Présence Suisse committed to renovate the pitch and support the local club. A big challenge, as the pitch is built on
the water of the lagoon. A lot of water infiltrates under the pitch, which destroys it slowly. Putting new soil on it wouldn’t be the solution either as the ground become heavier and gets more and more down and full of water.

“The shores of Lagoa have been built on the lagoon. The baseball pitch is literally on the water which makes things complicated for the renovation but we will find a solution to make sure kids can run on this pitch very soon again.”

Gian-Carlo Fenini, Swiss General Consul in Rio
The Result

The House of Switzerland and the Swiss General Consulate committed to Rio and the local Baseball club to find a solution to renovate the pitch and to financially support the club. They will offer new equipment and will pay one year of coach training. A new pitch where kids can be educated through the values of sport and bring peace, serenity, and solidarity.
CANADIAN NOC - CARBON OFFSETTING

The Project

The Olympic Games spark the movement of people and cargo like no other event in the world, and with this movement comes the burden of a massive carbon footprint. Team Canada recognized the impact their travel to Rio 2016 would have on the environment, and decided to partner with Vancouver based firm, Offsetters Climate Solutions, to help “offset” the environmental impact. The team, which comprised 313 athletes and a considerable number of coaches, physicians and support staff, travelled a total of 15.7 million kilometres, approximately equal to 392 trips around the planet.

Carbon offsetting is a well-known concept nowadays and it simply aims at reducing emissions of carbon dioxide or greenhouse gases to compensate for emissions elsewhere. Greenhouse gases help trap the heat within the Earth’s atmosphere and its surface. These gases play a key role in keeping the surface of the Earth at a habitable temperature but an increase in the amount of greenhouse gases can be a significant contributor to global warming. Greenhouse gases are emitted through any form of burning of fuel; it can be industrial, automotive, or even human breathing!
The Story

This is not the first time that the travelling contingent from Canada has taken the initiative to limit their impact on the environment. With the help of the same firm, the team travelling to London 2012 and Sochi 2014 had gone “carbon neutral” by reducing greenhouse gas emissions equivalent to 2,151 and 1,290 tonnes respectively.

The calculations done by the firm suggested an emission of 3,008 tonnes for the travel of Team Canada (including cargo) to Rio 2016. An equivalent volume of greenhouse gases will be reduced through state-of-the-art projects within Canada and across the world. A successful implementation of the projects will mean Team Canada, through its efforts since 2012, would have reduced carbon emission equivalent to 1/6th of the emission by the Canadian population in a day through respiration. Projects like the “Efficient Wood Cook Stoves” in Uganda and “Quadra Island Forestland Conservation” in Canada are going to contribute towards offsetting the carbon emission due to travel and shipment.

“Team Canada is proud to continue its efforts to offset carbon emissions. We had pledged that Vancouver would not be a one-off, and we are happy that we have successfully initiated carbon offsetting measures for London 2012, Sochi 2014 and Rio 2016.”

Erin Mathany, Director Strategic Partnership, Canadian Olympic Committee
The new stoves in Uganda increase combustion efficiency and heat transfer capabilities. This means that lesser amount of wood needs to be burnt to produce more heat. In addition, it reduces particulate matter from burning of food, consequently reducing indoor air pollution deaths which presently amounts to 1.5 million per year.

The project in Quadra Island helped protect around 4.2 square kilometres of forestland, in turn reducing greenhouse gas levels and conserving site-specific features. The carbon emission reduced is equivalent to removal of approximately 19,193 cars off the road annually.

![Estimated carbon emission figures for Team Canada for Rio 2016 Olympic Games](image.png)
The Result

Team Canada are proud to continue the carbon neutral legacy first initiated by Offsetters with the Vancouver 2010 Olympic Committee for the Vancouver 2010 Olympic and Paralympic Winter Games.

As of today, the partnership struck by Team Canada has helped reduce carbon emissions equivalent to 6,449 tonnes. The success and legacy of the initiatives starting from Vancouver 2010, and continuing through London 2012, Sochi 2014 and Rio 2016 will encourage the Canadian NOC to push for similar environment protection measures in the future and hopefully lay down a marker for other NOCs to follow.
FENCING – RIO LOVES FENCING

The Project

The beaches of Copacabana witnessed some unusual activities leading up to the Olympics, as people were seen fencing on the beach. The demonstration event, supported by the International Fencing Federation (FIE) and the Brazilian Fencing Confederation was called “Rio Loves Fencing”. The 2 days long event was part of the
FIE’s Fencing School Program, a 2 months-long campaign aimed to introduce fencing to children of multiple age groups and leave a tangible legacy for the Rio Games.

The Story

Thousands of schoolchildren across Rio learnt how to cut, thrust and parry as 12 national level coaches travelled across the city, from affluent barrios to Brazil’s biggest favela, Rocinha. Children from nearly 40 schools were introduced to the nuances of fencing and got to try out the sport themselves, complete with the masks and other equipment.

In addition to fencing lessons, tickets were distributed for the competition at the Olympics to children from 27 educational institutions. It was a brilliant gesture to give these children an opportunity they wouldn’t originally be able to afford.

“With the swords they didn’t fight but they experienced the effort and the respect...Maybe one day we can live in a peaceful world with those kids”
Asimina Tsellou, FIE Media Manager

The program culminated in the “Rio Loves Fencing” demonstration event where children picked up imitation swords and stabbed at their friends with balloons. Some children also got to face off one by one in teams of five, at an adjacent fencing clinic.
There was also some star attraction on offer as the country’s 3rd ranked foilist, Ana Beatriz Bulcão, demonstrated her skills in full fencing whites.

The event also marked the beginning of a week of fencing in Rio where the test event took place, comprising of the Rio stage of the Fencing Grand Prix in epee and World Championships.

School children learning the basics of fencing
The coach put a helmet on my head, a vest and then we started fighting and the girl won.

Young Brazilian boy participating in the Rio Loves Fencing programme

The Result

The outreach initiatives saw hundreds turn up for the FIE Sport Initiation Program (part of “Rio Loves Fencing” campaign) on the first day of competition at the Olympics. These undoubtedly included children who had received tickets for the Olympic event distributed during the School Program. The FIE initiatives helped achieve more than 90% spectator occupancy for 6 of their 18 sessions and overall estimated ticket sales of 84%.

The School Program introduced fencing to more than 3,000 schoolchildren who would, under normal circumstances, not have the chance to experience the sport. The FIE also helped the International Wheelchair and Amputee Sports Federation (IWASF) by giving them their equipment for the Paralympic events in Rio.
NBA HOUSE – CISCO ACADEMY PROGRAM

The Project

The Olympic City Technical Programme has prepared more than 300 network technicians to work with the Rio 2016 technology partners during the Olympic Games or enter into another job within the IT-industry. The programme has been developed by Cisco to provide free-of-charge, in-person training to locals from Rio de Janeiro.

After completing 70 hours of training on “IT essentials”, students could continue with another 150+ hours to become Olympic Network Technician. The NBA House hired three Olympic Network Technicians to work for them during the Rio 2016 Olympic Games.

“Technology is an area with several career development possibilities, and professionals in this sector are in a great demand by the market, especially with the arrival of an event with the proportion of the Olympic Games,”

Rodrigo Uchoa, New Business Director and Rio 2016 Coordinator for Cisco
The Story

Edna Félix juggled the workload of the Cisco course with her responsibilities at home and her other college courses. After five months she was among a small group of women who graduated. 100 of the 300 graduates of the Olympic City Technical Programme were employed during the Rio 2016 Games. Edna worked as network
technician at the NBA House. As the NBA always needs temporary Cisco-technicians for their events, they were quick to recruit Edna and her two colleagues for the NBA House.

“All you want; you achieve with education.”

Edna Felix, graduate Olympic City Technical Programme and working at the NBA House

Graduates working at the NBA House during the Olympic Games
In total over 100 graduates worked throughout a variety of venues and hospitality houses during both the Olympic and Paralympic Games. Among them were three who worked at the Operations Centre of the Beach Volleyball Arena.

The Result

Yuri Vidal, a fellow-graduate of Edna, also worked for the NBA House during the Olympic Games. Working at the Games gave him a kick-start in his young professional career. Following his work with the NBA House, Yuri got invited to come to the USA to work as Cisco network technician on another event.

“Starting your professional career with hands-on experience at the biggest sport event on the planet is a unique opportunity”
Yuri Vidal, graduate Olympic City Technical Programme and working at the NBA House
The Project

Gender equality and empowerment of female athletes in sport and in leadership remains an important issue and a core pillar of the Olympic Agenda 2020. Athletes continue to make progress towards equality on the field of play - the number of male and female athletes competing at the Rio 2016 Olympic Games neared parity for the first time. There is still work to be done, however, to ensure women are equally represented in sports administration and leadership roles across the Olympic Movement and the wider sporting community. Tied to this is the idea of athlete transition and the need to create pathways for athletes to succeed after they retire from competitive sport.

To help draw attention to the challenges faced by many female Olympians transitioning from sport to a post-retirement career, as well as highlighting the opportunity to harness the leadership potential of elite female athletes in order to
narrow the gender gap in sports administration, the World Olympians Association teamed up with Rio2016 official supporter, EY, to host Women.Fast Forward.

“Gender equality is not a ‘women’s issue’. It is a basic human right of profound importance and a fundamental principal of the Olympic Charter. Olympic Agenda 2020 illustrates our commitment to gender equality.”
IOC President, Thomas Bach

Women.Fast Forward brought together key figures from the Olympic Movement, prominent female Olympians, business leaders, and dignitaries at the Olympians Reunion Centre by EY in Rio. This event shone a light on gender equality in sport, paid tribute to the impact the Olympic Movement has had on empowering and advancing women, and honoured some of the world’s most accomplished women in sport.

During the event, which took place on 10th August, IOC President Thomas Bach and World Olympians Association President Joël Bouzou, outlined the Olympic Movement’s shared commitment to advancing women in sport. They drew attention to the critical role sport plays in preparing women for leadership roles and advancing their careers beyond competitive sport.
The Result

The event successfully drew attention to the issues of gender equality and athlete transition in line with core recommendations from the Olympic Agenda 2020, while also placing the valuable work of the IOC Women in Sport Commission in the spotlight. By aligning Women.Fast Forward with the Rio 2016 Olympic Games and using influential figures from within the Olympic Movement, such as Thomas Bach, to maximise the impact of the message, World Olympians Association was able to...
generate awareness and engender support amongst its key stakeholders. A large international media presence at the event allowed World Olympians to further share the message to a large global audience with articles and videos appearing on Reuters, Olympic.org and Around the Rings, to name a few.

Among the key outcomes, the Women Athletes Business Network (WABN), an initiative of WOA’s Rio 2016 partner EY that aims to support the career progression of top female athletes following their retirement from competitive sport, was given an invaluable boost. The event also served to launch the EY WABN Athlete Intern Programme, which offered eight Olympians competing at Rio 2016 the opportunity to take up an internship with EY after the Games. Through this project, WOA and EY were able to leave a positive legacy from the Games by helping to harness the leadership potential of these athletes and support them through their progression from sport into business.

“Another leader in the area of gender equality is EY and the Women Athletes Business Network (WABN), who continue to innovate and inspire female athletes around the world to reach their leadership potential once they embark on their post-athletic career. We are proud to partner with the EY WABN to support the life transition of Olympians and help develop pathways for future success.”

WOA President and Olympian, Joël Bouzou
RUGBY - TOURNAMENT UNIFORMS

The Project

Sports events traditionally lead to the production of tournament uniforms for officials and volunteers. T-shirts, jackets, etcetera, with the tournament-logo are popular souvenirs but often also have a higher negative impact on the environment than expected. The assessment of a 1-day international athletics event resulted in an estimate of water consumption of 2,500 cubic meters of water related to the provision of t-shirts to event officials and volunteers. This equals to more than 20,000 showers of five minutes’ in length.

During their first appearance at the Games since 1924, World Rugby decided to change its approach to their official uniforms for the group of approximately 80 World Rugby delegates in Rio, including match officials, technical delegates, and officials. The objective was to limit needless environmental waste and reduce costs, while acknowledging the importance of branded clothing to build team spirit and support a professional appearance.
The Story

From the group of 80 World Rugby delegates, approximately 50 would have received some kind of official Rio 2016 uniform. For those not entitled to this clothing, the “unofficial” uniform for Rio 2016 was limited to one jacket, one cap and 1 to 3 polo shirts, subject to their role. Previously, delegates may have received at least 1 branded shirt per day. The clothing was to cover 8 days, which included all 6 tournament days. World Rugby staff could supplement this clothing with their own generic World Rugby clothing. Whereas previously staff may have received up to 8 polos for a similar period on-site, the decision to reduce quantities was taken to limit needless environmental and economic waste. It saved the production of up to 350 shirts at an approximate total cost of USD$3,500, not including additional shipping and freight impacts.

“Necessity often leads to innovative and practical solutions – for Rio, if it wasn’t absolutely necessary, it wasn’t ordered and this approach helped reduce waste while making economic sense”

Jaime McKeown, Development and International Relations Project Manager, World Rugby
Furthermore, while local production of the tournament uniforms would have saved transport costs and reduced carbon emission (due to transport of goods), World Rugby chose to produce their uniforms in Europe with an existing supplier certified for sustainable and ethical production. Instead of shipping the uniforms in a container, the reduced numbers of shirts, caps and jackets were distributed to staff in advance so they could bring them to Rio in their own luggage, thus avoiding further travel impacts, potential delays, and associated costs.

The Result

Sustainability is often defined as a 3-legged stool, balancing social equity, environmental integrity and economic efficiency. World Rugby’s initiative addresses all 3 areas of sustainability.

Limiting the production of tournament-specific clothing and utilising existing generic World Rugby clothing saved thousands of cubic litres of water (environmental impact) that would have been needed for production of the clothes. Working with a certified supplier ensured the products were made under ethically acceptable circumstances (social impact). Finally, World Rugby saved several thousand dollars through reduced production and smart transport of the uniforms.

For future events, World Rugby aims to further increase the use of uniforms without tournament logos to encourage reuse of existing generic clothing.
The Project

Pela Vida Committee (For Life Committee) was created by Maria Bourgeois in 1993. For more than 20 years, this NGO has offers free hospitality classes to Brazilians coming from favelas to help them to get an education and find a job in Rio’s hostels and restaurants. Financed by donations and public funds, Pela Vida educated 15,000 Cariocas in customer services, cleaning, room service, reception, restaurant services, cooking, etc.

The Story

Maria Bourgeois is a colourful, tenacious and warm lady with an unusual life journey. Born in Brazil, she was chosen by Pierre Cardin to be his first top model. She travelled around the world with him until she married a Swiss citizen. She then lived in Geneva and was dedicated to raising her family. After her husband’s death, she successfully fought cancer. Thankful of what life gave her, she decided to go back to Brazil and to dedicate her life to others.
She founded a hospitality school to develop people from very poor Brazilian communities. The city of Rio provided the space, where she established the school. All the materials come from donations. The school contains a “fake” hotel room and a full professionally furnished kitchen. The students receive practical classes that teach them how to manage customers, how to talk to them, what discipline and behaviours are required in an hotel, and all hotel and restaurant services such as cleaning, room preparation, cooking, etc.

Every three months, 60 students benefit from the professors’ teaching. After this education, and thanks to Maria’s network, 80% of the students find jobs in bars, hotels, and restaurants in Rio.

“I think that I must do this. The most important is to feel good in our mind and body and to make the world a better place”
Maria Bourgeois, founder of Pela Vida

The Result

Word of mouth travels fast and residents from all the favelas are hoping to join the school. Maria tries to find a solution for all who appear at her door. A psychologist takes care of each new student. Today, Maria is proud to say that the school saved about 15,000 Cariocas, even if some of them gave up on the way.
The House of Switzerland associated with the Swiss General Consulate financially supported the school. They hired the best students to work at the House of Switzerland during the Olympic and Paralympic Games 2016, offering them a unique experience and hope for the future.

Some Pela Vida students worked for the Swiss House at Rio
The Project

The Volleyball House on Copacabana Beach saw itself get transformed once again to welcome the building’s regular occupants - the students of the Cicero Penna School, who have been the immediate beneficiaries of the legacy left behind by the FIVB.

The FIVB and Rio’s Department of Education reached an agreement to allow the FIVB to hire the school during Rio 2016 and use it as Volleyball House, a home away from home for players, coaches, former athletes, the FIVB and its members, fellow sports federations and business and sponsorship partners.

Inauguration of the Volleyball House
During the Games, Volleyball House, opened at the same day as the official Games’ Opening Ceremony, received over 3,000 visitors and won the “Rio 2016 Hospitality House” award in the Legacy category given by Rio de Janeiro Chamber of Commerce.

A classroom in Cicero Penna School before its renovation by FIVB
The Story

Almost 600 children returned to the school just a week after the closing of the Olympic Games, which was refurbished by the FIVB to leave a social legacy for Rio. Ana Maria dos Prazeres, Director of the Cicero Penna school said the story of the school had begun with a legacy in itself as the house was the place of paediatrician Cicero Penna, who donated it to the government to host a care centre.

The idea of the Volleyball House was to have a place where they could welcome the volleyball community, leverage business and promote their events. But that was not enough for FIVB and they wanted to go beyond.

“The Volleyball House fulfilled another role, to spread our philosophy: to make volleyball the number one family sport entertainment in the world. So there was nothing better than to choose a school where the children could participate in the process and, ultimately, benefit from a completely renovated and more inviting college for the daily study of 600 students.”

Dr. Ary S. Graça Fº, FIVB President

Students now attend the school knowing that their school welcomed some of volleyball’s top players and personalities in one of the most successful social initiatives at the 2016 Rio Olympics. The classrooms were used by FIVB as meeting rooms,
viewing rooms (for both indoor and beach volleyball), working rooms and virtual reality rooms.

A handful of lucky students were at the Volleyball House during the Games. Two students attended the opening day, with several more on hand at the FIVB Athletes’ Commission announcement. Luiza, one of the students who visited the Volleyball House, said she was thrilled to see her drawing on a panel on the third floor.

“I was with my mother looking at the pictures when I saw that mine had been chosen to be displayed. I showed my Mum and she did not believe it until she saw my signature.”

Luiza, Student at the Cicero Penna school

The Result

The kind gesture by the FIVB resulted in a refurbished elementary school, Cicero Penna School, leaving a legacy for the school children. New electrics and plumbing was put in place, along with a new fire prevention system. Classrooms, kitchens and sanitary facilities were upgraded and the interior of the whole building was repainted. The additions also included the installation of wireless internet, a new fence and also over 3,000 Reals ($900) of new books. The school’s students are also able to use the volleyball courts that were built across the road on the beach. These were a popular draw for former players and spectators during Rio 2016.
The Project

The National Basketball Association (NBA), runs a variety of sustainability initiatives through its NBA Green program. During the Olympic Games in Rio, NBA House presented by Cisco introduced a unique waste management program aimed at reducing the waste they produced from entering the landfill by 97%.

Their initiative aptly coincided with the “Rio Olympics waste pickers program”, which was in partnership with Rio 2016, Coca-Cola, the Rio state government and Federal government of Brazil. The program saw waste pickers collect recyclable goods from Maracana, Olympic Park and Deodoro and transport them to a central depot where they were sorted, stored and sold to scrap merchants. The pickers were
given a share of the profits; as well as, a fixed daily salary of R$80 (£19), significantly more than their normal average of R$30 (£7) per day.

Nine members from the community were recruited by the NBA to work on the waste management project. Pickers collected and sorted waste by type (e.g. PET-bottles, cardboard, cans, etc.) Items collected were either sold, given to brokers or stored where necessary and all other items sent to the landfill.

The NBA House in Rio
**The Story**

NBA House presented by Cisco was constructed in a warehouse in Rio’s renovated port area. The majority of the waste produced at the venue was sorted on-site and where possible, re-used to benefit the local community for example reused or recycled PET bottles.

Energy efficient lighting was incorporated for all NBA House presented by Cisco entertainment while strategically placed air-conditioners managed a natural stream of air flowing through the house. This provided an effective climate control system thereby lowering the overall amount of energy consumed.

Admission to the venue was free for members of the Rio community as a way to include basketball fans in the Olympic celebrations. As part of the activities the NBA invited local basketball organizations to House to participate in a 3x3 tournament.“

**The Result**

During the construction, 470m³ waste was collected, of which only 2m³ entered the landfill. A staggering 99.5% of NBA House presented by Cisco’s waste was “managed” – either sold or donated to organizations with the ability to reuse the material, store it for its value (e.g. vinyl) or give it a new life through recycling.
The NBA House presented by Cisco program established that certain types of waste products have an economic value in Rio and their value varied significantly based on the type of waste; such as, cardboard, cans, plastic and foam.

The initiative brought awareness to the sustainability efforts at NBA House presented by Cisco and highlighted that ‘waste should not be wasted’ and that everyone can reduce, reuse and recycle.
ABOUT THE AISTS

An academic centre of excellence for education and applied research in sport

The AISTS is an academic centre of excellence for education and applied research in sport. It forms a unique network of multi-field expertise in technology, management, economics, medicine, law, and sociology.

The mission of the AISTS is to Master Sport by positively contributing to sports management through a multi-disciplinary approach to education and sciences and by remaining at the forefront of the sports industry’s development and the Olympic Movement.

The AISTS was founded in 2000 by the International Olympic Committee (IOC), the EPFL, the University of Lausanne, the University of Geneva, IMD Business School, EHL (Ecole Hôtelière de Lausanne), the City of Lausanne and the Canton of Vaud.

The AISTS responds to the needs of the sports industry by focusing its activity on three key pillars:

**EDUCATION**

Educating leaders in sports management through adapted education programmes.

**APPLIED RESEARCH**

Providing knowledge and expertise in relevant fields applied to the sports environment.

**CONNECTIONS**

Acting as a strategic connector in the world of sport.