Land Rover BAR
2015 Annual Sustainability Report

Raising the BAR
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We have put sustainability at the heart of everything that we do at Land Rover BAR since we decided to challenge for the America’s Cup. We want to win the America’s Cup, build a sustainable long-term business and do it with respect for all the principles of sustainable operation.

There’s no doubt that 2015 was a significant year of transition in the way that we operate the team, moving from temporary offices and dock facilities to a BREEAM Excellent standard, purpose-built facility housing all of the team’s activities from design to sailing, sports science to marketing – a showcase for sport, innovation, technology and sustainability in the heart of Portsmouth.

The impact that this has had on our operations is clear in this report, and while there is still plenty of work to do, we know that this is a huge step forward in the sustainability of our business.

Once again, I’m proud to introduce our second Sustainability Report, further evidence that we remain on target for our goal of becoming the most sustainable professional sports team in the UK.

Sir Ben Ainslie, June 2016

A huge step forward in the sustainability of our business
Introduction

This is the second annual sustainability report of Ben Ainslie Racing Ltd. The sailing team was initially established to challenge and win the 35th America’s Cup to be held in Bermuda in June 2017. Since the outset, sustainability has been a core part of the team’s operations and ethos. 2015 has been an exceptional year for the team, with some major milestones including Land Rover becoming Title and Innovation Partner and the team being named Land Rover BAR and we moved into our second year working closely with our Exclusive Sustainability Partner, 11th Hour Racing Inc.

This report is based upon the Global Reporting Initiative (GRI) sustainability reporting standard¹ in order to provide a succinct but well-rounded picture of Land Rover BAR and its values. The team focuses on all elements of sustainability; the environment, resource use, waste, social/human aspects, local communities and the local economy. This report covers the activities undertaken during the 2015 calendar year by Land Rover BAR.

Sustainability reporting is essential to the progress of Land Rover BAR; monitoring progress and identifying areas for improvements and potential cost reducing measures, as well as enabling easy comparisons with other organisations and communicating information to stakeholders.

Stakeholder feedback is very important to Land Rover BAR. All enquiries, comments or suggestions related to the sustainability report should be directed to sustainability@landroverbar.com.

¹ The Global Reporting Initiative (GRI) is an internationally recognized organization that promotes the use of sustainability reporting as a way for organizations to become more sustainable and contribute to sustainable development. GRI Sustainability Reporting Guidelines can be found at https://www.globalreporting.org/reporting/g4/Pages/default.aspx
October

- T2 was launched, the first Land Rover BAR designed and built training boat.
- BT join the team as the Technology in Sustainability Partner.

October

- Land Rover BAR conclude 2015 ACWS season in 3rd place overall.
- Launch of two Docking RIBs built by 53 apprentices. Sustainable materials result in 20% carbon saving.

October

- Complete initial life cycle analysis and composite recycling project presenting the results at the World Yacht Racing Forum.
About Ben Ainslie Racing Ltd

Ben Ainslie Racing Ltd was conceived by four times Olympic gold medallist and 34th America’s Cup winner, Sir Ben Ainslie, with the long-term aim of challenging for Britain and bringing the America’s Cup back home to where it all began in 1851.

The team is committed to embedding sustainability throughout all of its operations while developing a British entry capable of winning the prestigious trophy, something Britain has so far never managed to achieve.

Ben Ainslie Racing is a commercial sporting team, becoming Land Rover BAR in June 2015 when Land Rover was signed as Title and Innovation Partner. The team now has a Title Partner in Land Rover and an additional 3 main partners in 11th Hour Racing, BT and CMC Markets. There are 12 official suppliers and a number of technical and base suppliers. Alongside the commercial partners and suppliers are a number of individual private investors. The team is made up of some of the best British and international sailors, designers, builders and racing support. It is set up as a limited company with shareholders and private investors who provide the backbone of support to the team. Sir Ben Ainslie is the majority shareholder and the Team Principal. The core business centres on the team’s participation in the America’s Cup, an activity that creates revenue through the marketing of that sporting event, and the commercial partnerships created with organisations and businesses that can benefit from it. The team’s core activity centres on the participation in the America’s Cup and more recently with the Land Rover BAR Academy in the Extreme Sailing Series and Red Bull Youth America’s Cup in 2017.

We have embedded sustainability into the whole team’s operations taking a balanced approach to economic activity, environmental responsibility and social progress. We believe there is an opportunity for all sports teams to become truly sustainable businesses. We plan to lead the way by educating and inspiring younger generations, who will then drive sustainability forward instinctively.

Land Rover BAR’s vision and values

Sports teams represent key role models in society and the America’s Cup attracts more media and public attention than any other sailing contest. This privileged position is not taken for granted at Land Rover BAR and we believe our influence should extend far beyond the race course.

Land Rover BAR are striving to achieve major sustainability objectives, with a light environmental footprint, zero waste and minimal energy consumption. We also have significant opportunities for creating positive change through our community engagement, to use innovation to drive sustainability, and to build our technical and design capacity and skills base.

Our objectives have been developed from three areas which represent our sustainability vision. The activities incorporated into each area are those which we will focus our efforts on to support a better future for the environment, people and the economy.

<table>
<thead>
<tr>
<th>Area</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smarter Futures</td>
<td>Resource efficiency and pollution prevention, materials (including waste), water, energy, transport and transportation, reduction in emissions, protection of natural resources, staff welfare</td>
</tr>
<tr>
<td>Inspiring excellence</td>
<td>Supply chain management, sustainable procurement, sustainable food sourcing, local supply chain, building skills and education – skills development, partnerships, community engagement, outreach, best practice, reporting and demonstration of leadership in sustainability</td>
</tr>
<tr>
<td>Driving Innovation</td>
<td>Building technical capacity, carbon recycling, fuel efficiency, blueprint for marine industry operations</td>
</tr>
</tbody>
</table>
The America’s Cup

The America’s Cup is the oldest international trophy in world sport, pre-dating the modern Olympic Games, the Ryder Cup and the FIFA® World Cup- and Britain has never won it.

The first race was organised by the Royal Yacht Squadron in 1851. It was a single race around the Isle of Wight, open to yachts of all nations and a black schooner America won. To honour that victory, it was renamed the America’s Cup and became a challenge trophy, open to sailing clubs of all nations.

American teams representing the New York Yacht Club successfully defended the Cup against all challenges for 132 years- the longest winning streak in sport- until an Australian team won in 1983. Since then the Cup has become a truly global phenomena, with challenges from all five continents.

The current holder of the America’s Cup, ORACLE TEAM USA, has set the 35th match for June 2017. It will be raced in Bermuda, in 50 foot foiling multi-hulls called the America’s Cup Class (ACC). 2015 saw the start of the preliminary series, called the Louis Vuitton America’s Cup World Series (ACWS) with three events in Portsmouth, Gothenburg and Bermuda. 2016 will see a continuation of the ACWS events in different venues around the globe, culminating in the America’s Cup Challenger Playoffs and the America’s Cup Final in Bermuda in June 2017. The event organisers are embracing sustainability goals through the Endeavour programme and its own green guidelines. Land Rover BAR are working with the America’s Cup Event Authority and the AC35 teams to develop a Team Sustainability Charter which will hopefully be adopted in 2016.

When Land Rover BAR win the America’s Cup, the team will be able to return it home to where the story started, the waters off the Isle of Wight.
Land Rover BAR collaborates with its corporate partners around sustainability changing the way sport team sponsorships are activated. The team put sustainability at the heart of their operations from the outset and launched in 2014 with their Exclusive Sustainability Partner 11th Hour Racing. Since that time, the sustainability programme has been an area where a number of key partners have collaborated together recognising the power of sport to drive social and environmental change.

**Title and Exclusive Innovation Partner**

**Land Rover**

Land Rover supports the team’s development of their life cycle analysis approach to the manufacturing of the race boats. Through the LCA process, Land Rover are able to prioritise actions to achieve a targeted 30% reduction in carbon emissions across their manufacturing process by 2020. Their work on environmental innovation drives their decision making on materials and design and a collaborative sharing of knowledge across newer more sustainable composite materials.

According to Ian Ellison, Sustainability Manager, Jaguar Land Rover:

**Once the partnership formed and our sustainability teams met, we realised we were all on the same wavelength. We instantly knew that we all share a passion for environmental innovation and have plenty of common ground to work on as we work together to bring the cup home.**

**Exclusive Sustainability Partner**

**11th Hour Racing**

11th Hour Racing Inc. was developed to create a new model of sport sponsorship utilizing the platform of winning teams to drive a sustainability message to fans and through industry. 11th Hour Racing specifically works with sailing teams with the aim of increasing our understanding of the oceans, finding solutions to the problems that damage or destroy our marine resources, and promoting stewardship and sustainable use of the seas that sustain life on our planet.

As the Exclusive Sustainability Partner, 11th Hour Racing supports the team’s delivery of the sustainability strategy and promote the sustainability message from the team to a wider audience.

Jeremy Pochman, Director of 11th Hour Racing explains the connection:

**We recognise there is no greater sailing platform than the America’s Cup to promote ocean health discussions and innovations.**
Technology in Sustainability Partner

BT

Towards the end of 2015, BT signed as the technology in sustainability partner and joined the already growing group of partners with a sustainability message. The partnership was launched at the United Nations Social Good Summit where Sir Ben, alongside BT Sustainability Manager, Niall Dunne launched the 100% Sport campaign to encourage sports fans to switch to renewable energy.

Johanna Jokinen, BT’s Marketing & Communications Director, says both initiatives are a reflection of shared core values:

BT is a communications services company with a long history in environmental sustainability. BT is also a sports broadcaster and owns the rights to air the America’s Cup on our BT Sport channels. We learned about Land Rover BAR’s great environmental drive and commitment to sustainability and felt this aligned greatly with BT’s own environmental aims and ambitions. The partnership with Land Rover BAR not only gives us a great, credible face of the 100% Sport campaign but also allows us to showcase their great work through our sport channels to inspire others.

Renewable Energy Partner

Low Carbon

Low Carbon provided the team’s roof top solar array at the team base in Portsmouth, designed to deliver around 20% of the team’s electricity demand. The organisation is working with Land Rover BAR to provide solar power to the temporary base in Bermuda and deliver a lasting clean electricity supply on the island way beyond the life time of the team itself. They have also worked to engage locally and build on the work the team is doing with the education sector supplying solar power to a local school and supporting the team’s charity partner the 1851 Trust with income from the feed-in-tariff.

Low Carbon Marketing Director, Quentin Scott sees:

there is a real opportunity for the sports industry to lead the way in making sustainable changes in 2016. In particular, we want UK renewables to play a part in the bid for a high profile UK sporting success story.
Identifying what matters

As part of our sustainability management system, certified to the international standard ISO20121\(^2\) the team takes a robust approach to identify what matters when it comes to sustainability. The team’s activities are mapped out and the corresponding sustainability risks and opportunities associated with each activity are identified. These are then scored on the following criteria:

- Likelihood of occurrence
- Severity of occurrence
- Interaction with stakeholders
- Association with defined principles of sustainable development
- Likelihood of detection
- Legal and other requirements
- Compliance history
- Frequency

In addition, the team carries out a carbon footprint of the team’s activity to help prioritise action to reduce the environmental impact of its activities.

\(^2\) ISO20121 is the international standard for Sustainability Management Systems for Events. Land Rover BAR are the first sports team to achieve third party certification across all of their activities.
Stakeholders

During 2015 Land Rover BAR has continued to communicate and engage with its stakeholders from the team members and families, private investors, corporate partners and suppliers, local and central government, our team’s fans as well as the sport and marine industries sharing good practice. We regularly attend and host events, create case studies and written media to share the work of the team. This creates a sustainability network throughout both the sport and marine industry that can share best practice and accelerate a transition to more sustainable business practices.

Land Rover BAR has a broad range of stakeholders which we communicate with extensively, through written and social media channels, and face to face. We embrace opportunities to engage our stakeholders and always encourage their feedback and opinions on our sustainability work. Major areas of interest raised by our stakeholders where we are focusing innovation projects and communications are around:

- Showcasing sustainable building design and post occupancy building performance
- Driving sustainability through sport and sporting events
- End of life of composites, sustainable composites and life cycle assessment
- Single-use plastics, ocean plastics and ocean health
- Renewable energy and carbon emissions
The Team Base

Land Rover BAR was awarded £6.5 million of Government funding to support the building of a £21 million base on the Camber in Portsmouth.

The team moved into their state of the art facility in June 2015. One of the critical aims of designing and building a new base was to exemplify the ethos of embedding sustainability into everything the team does. The base brings together designers, sailors, business support, communications and marketing, and the shore support team. It also hosts the Tech Deck an education centre to engage and inspire young people in the STEM subjects- science, technology, engineering and maths- using all aspects of the team from yacht design, materials, renewable energy and human physiology.

The base has and will continue to bring considerable economic benefit to the UK economy, using Solent and UK suppliers and creating employment in an area which has suffered recent job losses. The construction of the base contributed an estimated £18.5 million to the UK economy.

Using Building Information Modelling (BIM) during design, led by the team’s architects, HGP, promoted value and collaboration, underpinned by structured data. The collaborative approach enabled the contractors to stick to the tight delivery timeline and reduce errors and snagging at a later date. Typically, a project of this scale would take 3 years to deliver rather than the 16 months in which the project was completed.

Richard Pelley, Project Manager from Allied Development explains:

This only happened with the total cooperation of all the contractors, designers, utilities, and the council, embracing the collaborative approach, sharing information, listening to all suggestions to make the right decision in a very short period of time where everyone understood the aim.

The team’s sustainability requirements along with the planning condition to achieve the BREEAM Excellent standard drove detailed consideration of design, construction materials and products, how they perform in-use, and what options are available at the end of their life in terms of reuse and/or recycling.

The project was managed to a high standard by the contractors Allied Developments, who achieved ‘beyond compliance’ from the Considerate Constructors Scheme.

Environmental impacts

The team’s aims included reducing the impact of materials (type, quantity and location), energy and water as well as considering where...
impacts would occur across the whole life—e.g.,
construction, operation and deconstruction/end of life—to fully consider the impacts of
the building design and material choices. Key elements of environmental performance
achieved by the facilities are shown below. These include 100% demolition concrete reused
in foundation as secondary materials; over 97% recycling of all demolition materials from site;
specification of natural and low energy (LED) lighting; renewable (solar) energy and 25% improvement in water efficiency over existing UK building regulation standards. Design of the building envelope itself has improved the thermal performance of the building two fold when compared to building regulations.

Whole life thinking has meant that operational efficiency has been incorporated not just into
the construction phase, but also day-to-day management of the facility. A comprehensive
building management system shows efficiency of the equipment and enables the performance
of the building to be closely interrogated. The construction of the building supports the team’s
operational management. For example, the bike storage is used to maximum capacity, the team
closely monitors the effectiveness of the travel plan encouraging the use of public transport, car
sharing and cycling to work. Over half the staff took part in the Cycle to Work day in September 2015.

Considerate Construction

<table>
<thead>
<tr>
<th>Performance Beyond Compliance</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>44/50</td>
<td>21</td>
<td>52</td>
</tr>
<tr>
<td>Consulted by local community</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office updates Portsmouth City</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Council website</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ecology

- 9 m² artificial reef - 50 marine species incl. reintroduction native oyster
- 9 native plant species to be introduced

Resources and Efficiency

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar PV panels covering 100% of available roof area</td>
<td>432</td>
</tr>
<tr>
<td>MWh/yr from solar PV panels</td>
<td>130</td>
</tr>
<tr>
<td>Renewable electricity</td>
<td>100%</td>
</tr>
<tr>
<td>Offices with natural lighting through windows and central atrium</td>
<td>100%</td>
</tr>
<tr>
<td>Energy savings delivered by LED lighting throughout</td>
<td>30%</td>
</tr>
<tr>
<td>Litre tank harvesting rainwater</td>
<td>1200</td>
</tr>
<tr>
<td>Water efficiency improvement from building regulations</td>
<td>25%</td>
</tr>
<tr>
<td>Brownfield site</td>
<td>100%</td>
</tr>
</tbody>
</table>

Travel

- 30 staff and visitor cycle racks
- 2 BAR electric bikes
- 40% staff to use sustainable travel to base

A BESPOKE BUILDING MANAGEMENT SYSTEM MONITORS 15 DIFFERENT POINTS, INCLUDING ENERGY AND WATER CONSUMPTION, RENEWABLE ENERGY GENERATION.
Financial impacts

Setting sustainability at the heart of the build of the base has undoubtedly generated significant financial savings over the longer term. However, exact financial savings have not been accurately estimated. The most significant cost savings to the project would have been made through the collaborative approach, utilising BIM to save approximately half the programme time. Other savings were through the use of recycled aggregate on site, the removal of ceilings from the fit out, and the use of Westock beams with decreased steel volume. In some areas, there was an up lift in build cost to achieve the required sustainability standards, for example, high performance energy efficient equipment was selected for the plant and machinery which will bring longer term payback in terms of lower running costs through the life time of the building. Similarly, the choice of energy efficient lighting has higher upfront costs but will pay it back in a matter of a few years.

The opportunity for renewable electricity at the base has brought in additional sponsorship for the team with Low Carbon supplying the solar PV array to the base. This will essentially reduce the electricity costs for the team and support the 1851 Trust, the team’s official charity through the feed-in-tariff.

Social impacts

Local economic benefits will follow from the impact of local employment within an area designated as part of the regeneration strategy for Portsmouth City Council. The education center showcasing sport, innovation, technology and sustainability has been included within the base. This will provide young people with the opportunity to learn across the STEM agenda using the on-going operation of the team’s America’s Cup boats first-hand.

Sustainable base

The Building Research Establishment Environment Assessment Method (BREEAM) is the world’s leading standard used to assess a building’s environmental performance. The BREEAM assessment evaluates the entire building process, from design to operation. It focuses on the following series of categories, scoring each from ‘Pass’ to ‘Outstanding’:

• Energy
• Health and wellbeing
• Innovation
• Land use
• Materials
• Management
• Pollution
• Water
• Waste
• Transport

The planning stipulation by the local authority to drive environmental benefits of the project and to ensure energy efficiency was embedded at the design stage, and acted as a driver for the project in terms of overall sustainability. The innovative design has resulted in the team base scoring highly on the 15 separate building performance aspects which the BREEAM standard assesses with the target of BREEAM excellent to be achieved.

THE LAND ROVER BAR TEAM BASE WILL PROVIDE 120+ DIRECT JOBS, WITH 500 + MORE INDIRECTLY CREATED.
Ecology

A key element of a sustainable building and a critical part of the BREEAM assessment is the role of the built environment in the local ecology. Improving the ecology of the local area and creating a connection to the sea was important to the team. Land Rover BAR took a creative initiative to achieve ecological improvement by installing 9m² of artificial reef and oyster cages to encourage an increased population of oysters in the Solent region, which has recently seen a rapid decline in the native oyster population. A collaboration between Land Rover BAR, the Blue Marine Foundation, MDL and the Portsmouth Institute of Marine Science installed oyster cages in the Autumn of 2015. Oysters were provided by the Southern Inshore Fisheries and Conservation Authority (IFCA), who worked with local fishermen to relocate oysters from an area which was due to be dredged as part of a programme to deepen the entrance to Portsmouth Harbour.

The outside area on the education level is planned for bee hotels to host small communities of solitary bees along with herbs and flowers for use in the kitchen and events, avoiding the need for cut flowers and showcasing the potential for urban farming.
## Total attendees

<table>
<thead>
<tr>
<th>Event Area</th>
<th>Attendees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waterfront Festival Arena</td>
<td>73,100</td>
</tr>
<tr>
<td>Fanzone</td>
<td>7,100</td>
</tr>
<tr>
<td>Evening events</td>
<td>17,100</td>
</tr>
<tr>
<td>Hospitality guests</td>
<td>2,700</td>
</tr>
<tr>
<td>On the water</td>
<td>25,700</td>
</tr>
<tr>
<td>Across Portsmouth and Gosport (outside of official race village areas)</td>
<td>111,300</td>
</tr>
<tr>
<td>Royal Visit staff</td>
<td>6</td>
</tr>
</tbody>
</table>

## Personnel (per day):

<table>
<thead>
<tr>
<th>Personnel</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>America’s Cup personnel</td>
<td>122</td>
</tr>
<tr>
<td>From competing teams</td>
<td>197</td>
</tr>
<tr>
<td>ACWSP 2015 event team</td>
<td>198</td>
</tr>
<tr>
<td>Volunteers</td>
<td>295</td>
</tr>
<tr>
<td>Exhibitors</td>
<td>300</td>
</tr>
<tr>
<td>Traders</td>
<td>60</td>
</tr>
<tr>
<td>Journalists, including 24 international media</td>
<td>260</td>
</tr>
<tr>
<td>Contractors</td>
<td>1610</td>
</tr>
<tr>
<td>Security</td>
<td>190</td>
</tr>
<tr>
<td>Artists, performers, show guests and supporting personnel</td>
<td>60</td>
</tr>
</tbody>
</table>
Each America’s Cup team are able to bid for and host a World Series event in their home country. TEAMORIGIN Events deliver the ACWS Event in Portsmouth on behalf of the team staging two events, the first in 2015 and the second in 2016. The 2015 event was the inaugural ACWS event and saw Land Rover BAR crowned the winners. The event reached a wide audience and brought significant benefit to the local area, generating £9 million for the UK economy and £22 million in media value. 

Generating £9 million for the UK economy and £22 million media value
Smarter Futures is the area of our sustainability strategy that defines how we operate as an organisation. We were the first British sports team to be awarded the Olympic-inspired ISO 20121, which provides a management framework to Land Rover BAR to guide our use of resources and the impact we have on our environment and its ecology. By ‘walking the walk’ we will inspire other sports teams to follow in our footsteps and create smarter futures for us all.

Managing sustainability: ISO 20121 certification

The benefits of implementing ISO 20121, include:

- Cutting costs through better energy and waste management
- Identifying ways to improve the planning and delivery of events
- Achieving best practice efficiency and performance
- Defining roles and responsibilities for staff, contractors and suppliers

Land Rover BAR was congratulated on achieving the ISO 20121 certification by the Rt. Hon David Cameron, MP, during his visit to BAR’s team base. The Prime Minister commented:

I’d like to congratulate Ben Ainslie Racing on achieving their ISO 20121 status. I think when you are working at the high end of something like sport, proving that you can do that at the same time as meeting the highest standard in terms of sustainability is a great achievement.
Monitoring compliance and managing incidents

Land Rover BAR complies with all policies, regulations and legislation focusing on sustainability—both in the UK and abroad. This is achieved through the identification of relevant legislation and employee updates identifying measures to reduce the risk of any breaches. Legal compliance is managed via a Legal Register which details all relevant legislation and is kept up to date with amendments and new laws at all times. In the register are all regulations that relate to waste, energy, water, pollution, land protection and other aspects of sustainability. Legal compliance is audited as part of the ISO20121 management system, which enables the team to maintain performance. No legal breaches have been identified since Land Rover BAR was formed and no fines have been imposed, highlighting the effectiveness of the approach to compliance.

The health, safety and environment team review monthly any incident reports and identifies opportunities for continual improvement.

Zero pollution to land or the marine environment is a critical target for Land Rover BAR with the marine environment being integral to the existence of the sport. Consequently, stringent measures are put in place for the storage of hazardous materials such as fuels, which are properly maintained and all applicable precautions are taken to reduce the risk of spillage, such as implemented refuelling procedures. Relevant staff are trained in incident response, including the effective deployment of spill kits. All surface water drains are marked with drain markers clearly identifying them as such to avoid polluted water entering the sea. All support RIBs have been equipped with spill kits and RIB drivers take all necessary precautions to avoid pollution. In 2015, no significant spills occurred.

Andy Hindley, the team’s Chief Operating Officer explains:

*a management system using a standard like ISO 20121 provides a business like Land Rover BAR with a robust framework to operate within, and without doubt it helps to manage our risks in a number of areas.*

Since June 2015, 100% of our electricity is from renewable energy, saving 201 tonnes CO₂e.

Powering the team

Land Rover BAR has committed to creating as light an environmental footprint as possible, which is in part achieved through driving efficiencies. The majority of the energy consumed is from electricity and gas required to power the team’s base, fuel in the support boats and team vehicles and indirectly travel and transportation.

Land Rover BAR actively monitors its electricity use. The new base in Portsmouth is fitted with a comprehensive building management system which provides automatically recorded data. The system also provides improved granularity for investigation of unusual usage if relevant.

We are currently undertaking a post occupancy review of the building performance supported by the University of Portsmouth to continue to optimise energy consumption.

The team also has a long-term partnership with renewables investor Low Carbon. Low Carbon have ensured that our base is partly powered by the very latest, high efficiency solar photovoltaic technology. We have 432 solar panels covering all available roof space adding to our 100% renewable electricity target. A project to install additional solar at local schools was initiated in July 2015, the start of a number of compensation projects to mitigate the team’s environmental footprint.
Critical to on-water safety and performance improvements are the team’s chase boats. These boats need to be powerful enough to keep pace with the high speeds that the training and race boats achieve. Fuel consumption by the chase boats is a significant proportion of the team’s carbon footprint and is monitored along with the operating hours to identify fuel efficiency opportunities. This equated to 37 tonnes CO₂e in 2015. To reduce this consumption, the team worked with their Technology in Sustainability Partner BT to securely transmit the performance data from the training boats to Mission Control at the base. Mission Control is also known as the team’s ‘virtual chase boat’ as it significantly reduces the number of design team required on the water and potentially on some days will mean there is one less chase boat required. Assuming one person and their equipment weighs in the region of 100kg, a saving of around 0.8 tonnes CO₂e over the 3 year campaign is made for each person remaining onshore.

34% of staff use a bike and 20% walk for all or part of their journey, a further 15% car share.

Over the 3 year campaign, the ‘virtual chase’ boat will save approximately...
Team travel

Travel and transportation are essential business activities and the impact is unavoidable. The team has a travel policy to car share, use public transport, walk and cycle wherever possible. The use of technology, such as Skype, is encouraged wherever possible to reduce the need to travel, and is widely used for partner meetings in particular. Through the team’s travel plan, staff travel is actively monitored and activities undertaken to encourage the use of sustainable transport. Since July 2015, fuel for the company vehicles has been tracked through fuel cards facilitating the tracking of fuel and mileage in the five company vehicles.

In 2015, Low Carbon, the team’s Renewable Energy Partner, supplied two electric bikes for the team which are used for local transport to meetings and Land Rover, the team’s Title and Innovation Partner have supplied the team with one of their 6 electric defenders which are part of their testing and development programme.

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Another activity which has a significant impact is the shipment of equipment and boats. The race boats are loaded onto container ships and transported to their destination, the team’s shipping company records the methods, tonnage and distances equipment is transported enabling the total carbon impact to be tracked. In 2015 a total of 291 tonnes of equipment, suppliers and parts were transported a total of 301,243 km which is equivalent to 145 tonnes of CO₂e.

Team offer the Government’s ‘cycle to work’ scheme to all staff members and in 2015 supported national cycling campaigns such as Love to Ride and Cycle to Work Day. In total almost 70% of staff use a bike, walk or car share for all or part of their journey to the team base.

Due to the nature of our operation, international flights form a significant part of our overall carbon footprint. We track journeys through our travel agent and always consider the necessity of travel, with a view to minimizing impact. In 2015, Land Rover BAR flew 1.2 million km totalling 228 tonnes CO₂e.

The team has an event checklist which it utilises to implement best practice when travelling. Most accommodation, catering and event-travel is booked by a small number of people who are trained and aware of sustainability practices. Team members and shore staff who travel are all aware of sustainable practices to remember whilst abroad, and have all been issued a checklist of what they should look for and favour in hotels, restaurants and transportation options.

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0.8 tonnes CO₂e per person remaining in Mission Control
Water

Land Rover BAR are committed to reducing water used during their activities; in turn this will lead to a reduced carbon footprint, increased sustainability and lower financial costs. Water production has a high impact on sustainability due to the energy and chemical-heavy procedures required to produce clean and safe water, and to treat wastewater. Where possible the team takes steps to eliminate the use of potable water for boat wash.

The innovative ‘wing-butt’ water recycling unit eliminates run off and waste water, achieving 100% use of reused water for launching ballast. We saved 28,000 litres of water in 2015 through reuse during launching by using the ‘wing-butt’, developing a second unit to take to ACWS events which was shared with other teams. During the ACWS Bermuda, this system saved an additional 4,600 litres of water.

In total, our wing-butt system saved the equivalent water use of a single person for 213 days.

Waste

Land Rover BAR are committed to reducing the quantity of waste produced by the team, as well as maximising reuse and recycling quantities and diverting all waste from landfill. Waste contractors are selected based on their ability to handle the team’s waste in the most environmentally beneficial means possible.

During the first half of 2015, the team operated from the split sites at Whiteley, Fareham and Southampton Docks, where waste was collected as mixed recyclables and general waste. During this period an estimated 30 tonnes of waste were generated with a 40% recycling rate. Since moving into the new base at the start of Quarter 3, better waste reduction measures were put in place and improved monitoring of waste composition achieving a 55% recycling rate for the second half of 2015. Figure 2 shows the total tonnes of waste from July to December and illustrates the gradual reduction of waste during this period. The August peak waste was due to the disposal of one of the construction moulds which accounted for 4 tonnes of waste that month. The reduction in total quantity from general operations has been reduced dramatically by 52%. Including the mould increases this to 63% waste reduction.

In total, our wing-butt system saved the equivalent water use of a single person for 213 days.

The team’s window cleaners for the base, Dall Window Cleaning, were specifically chosen for their environmental credentials. During 2015, they carried out 3 cleans of the whole building, 5 reception cleans and a solar panel clean. This used approximately 4225 litres of water which came from rain water collected from their roof, collected in an underground storage tank, pumped through purifiers for use. In addition, they have reduced water use further through a device called a ‘uni-valve’ at the pole tap.
The team continually identifies areas of waste where reductions can be made such as packaging around the team’s clothing. The team worked closely with Henri Lloyd, the team’s Technical Clothing Supplier to reduce the packaging on clothing sent to the team, which has resulted in an estimated reduction of 50% of the packaging sent to the team. Swing tags are now fully recyclable removing the mixed materials and using just card and natural string. Henri Lloyd are also reviewing using biofilm rather than plastic wrap for shirts and T-shirts.

Since moving to Portsmouth in July, the team started to work closely with the social enterprise company, Recycled Assets, who find reuse for certain waste items such as pallets, plaster board, cardboard, composites and fencing. This has resulted in 12.5% of the team’s waste being reused. Examples of material reuse include pallets made into reusable christmas trees for the team and boxes used to securely send boat parts were made into planters for the team’s kitchen garden.

The team recognises that a portion of hazardous waste may not be able to be reprocessed, however, waste contractors are selected on their ability to dispose of waste through the least impacting option that is available locally. These are as follows:

- Pallets, plaster board, card board, composites, fencing has been sent to reuse
- Office waste, paper, card, packaging is sent for recycling
- All food is send to anaerobic digestion, currently there is no local composting facility available
- Oils, resins, paints and contaminated rags are disposed as hazardous waste and a proportion of this is re-processed and reused in new products with only the solid proportion incinerated
- The remaining proportion of waste that cannot be reused, recycled or sent to anaerobic digestion is sent for energy recovery at the local waste to energy facility
- Any waste that cannot be sent for energy recovery is sent to landfill.

![Figure 3 Waste disposal routes for Land Rover Bar waste from July – Dec 2015](image)

**Total quantity of operational waste from the team base was reduced by 52% between Quarter 3 and Quarter 4 during 2015.**
Carbon footprinting team operations

A full carbon footprint analysis for the team’s operations is currently being undertaken, and will include the construction of the team base and the manufacturing of the race boats. However, the team’s operational carbon emissions are continually tracked and used to prioritise actions. The summary operational carbon emissions for 2015, including the construction of T1 test boat, can be seen in Figure 4, and are estimated at 1080 tonnes CO$_2$e. This data shows the importance of selecting a renewable electricity supplier to reduce the impact of the electricity consumption. Taking into account the choice of electricity supplier for the second half of 2015, the impact from electricity use was reduced, with the overall footprint reduced by 19% and the increased importance in other areas can be seen in Figure 5.

Figure 4 Summary operational carbon emissions for 2015

Figure 5 Summary operational carbon emissions including renewable energy compensation in 2015
## Smarter Futures: progress against targets

<table>
<thead>
<tr>
<th>Objective</th>
<th>Target</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maximise the use of ‘greener’, sustainable products</strong></td>
<td>100% sustainable seafood for all operations</td>
<td>Food Charter in place, training for catering and events staff</td>
</tr>
<tr>
<td></td>
<td>No single use plastic</td>
<td>On track to achieve</td>
</tr>
<tr>
<td></td>
<td>100% wood FSC/PEFC certified</td>
<td>Achieved through supplier choice, chain of custody is not audited</td>
</tr>
<tr>
<td></td>
<td>100% paper and paper products to contain post-consumer waste (printing and branding)</td>
<td>100% recycled content for all paper</td>
</tr>
<tr>
<td><strong>Ensure staff welfare</strong></td>
<td>Set up cycle to work scheme and child care vouchers</td>
<td>Achieved</td>
</tr>
<tr>
<td><strong>Transparent reporting of progress</strong></td>
<td>Publish annual (GRI based) sustainability report</td>
<td>Achieved</td>
</tr>
<tr>
<td></td>
<td>Achieve and retain ISO20121</td>
<td>Achieved</td>
</tr>
<tr>
<td></td>
<td>Inspire 5 partners or suppliers annually to improve their sustainability management</td>
<td>Work in progress</td>
</tr>
<tr>
<td><strong>Increase awareness of sustainability in BAR and relevance to their roles</strong></td>
<td>100% staff to receive sustainability briefing annually and training where relevant to their role</td>
<td>Achieved</td>
</tr>
<tr>
<td><strong>Minimise environmental footprint of team base construction and life cycle operations</strong></td>
<td>Implement necessary improvements to building to achieve BREEAM excellent</td>
<td>On track to achieve</td>
</tr>
<tr>
<td></td>
<td>Life cycle approach to build, operation and deconstruction of Bermuda base - resource management planning and aim for zero carbon energy operations</td>
<td>On track to achieve</td>
</tr>
<tr>
<td><strong>Minimise energy consumption of the Team Base</strong></td>
<td>Energy consumption at or under BREEAM excellent design capacity of Base</td>
<td>Post occupancy evaluation project underway</td>
</tr>
<tr>
<td></td>
<td>20% electricity consumption generated by solar PV</td>
<td>Monitoring baseline year</td>
</tr>
<tr>
<td></td>
<td>100% mains energy from a renewable energy supply</td>
<td>Achieved</td>
</tr>
<tr>
<td></td>
<td>Temporary power generation utilising 20% minimum biofuel mix</td>
<td>No temporary power used</td>
</tr>
<tr>
<td><strong>Minimise environmental (carbon) footprint of team operations</strong></td>
<td>Monitor carbon footprint of team operations</td>
<td>Underway</td>
</tr>
<tr>
<td>Objective</td>
<td>Target</td>
<td>Progress</td>
</tr>
<tr>
<td>-----------</td>
<td>--------</td>
<td>----------</td>
</tr>
<tr>
<td>Minimise whole life carbon impacts of products we build and purchase</td>
<td>10% improvement in manufacturing efficiency identified by 2017 from baseline 2014/2015</td>
<td>Work in progress</td>
</tr>
<tr>
<td>Minimise risk of pollution to land, water and air and damage to species and habitats</td>
<td>Zero pollution incidents</td>
<td>Achieved</td>
</tr>
<tr>
<td>Minimise damage to species and habitats</td>
<td>Zero incidents</td>
<td>Achieved</td>
</tr>
<tr>
<td>Minimise fuel consumed</td>
<td>10% improvement in fuel efficiency in chase boats from 2014/2015 baseline</td>
<td>Monitoring baseline year</td>
</tr>
<tr>
<td>Minimise impact from staff and visitor travel</td>
<td>50% UK staff travel by sustainable forms of transport (not single occupancy car)</td>
<td>Achieved</td>
</tr>
<tr>
<td></td>
<td>Increase in staff uptake of cycle to work scheme</td>
<td>Promoted to staff</td>
</tr>
<tr>
<td>Minimise impact from transportation of goods</td>
<td>Screen all transportation options to provide lowest carbon impact</td>
<td>Work in progress</td>
</tr>
<tr>
<td>Minimise proportion of water from mains sources</td>
<td>100% external boat and equipment wash from rainwater</td>
<td>Work in progress</td>
</tr>
<tr>
<td>Minimise water consumption</td>
<td>Water consumption at or under BREEAM excellent design capacity of Base</td>
<td>Post occupancy evaluation project underway</td>
</tr>
<tr>
<td>Maximise recycling of waste</td>
<td>60% diversion from waste to energy and landfill through reuse, compost and recycling</td>
<td>On track to achieve (59% achieved)</td>
</tr>
<tr>
<td>Reduce waste</td>
<td>Actively manage waste at all venues including temporary event venues - where possible report on waste generated</td>
<td>Achieved</td>
</tr>
<tr>
<td>Zero waste to landfill</td>
<td>Zero to landfill for all non-hazardous waste, no waste directly to landfill</td>
<td>On track to achieve (97% achieved)</td>
</tr>
</tbody>
</table>
Inspiring Excellence

Land Rover BAR is committed to playing a major role in creating an innovative zone of marine excellence across the Solent region. The team is already on the journey to developing regional high-performance marine engineering skills and will continue to do so through our work experience, internships and apprentice schemes. Through procurement that looks to utilise local Solent suppliers the team will continue to encourage similar high-performance marine industries to relocate to the region to create a centre of marine technology, design, engineering and innovation excellence along the coast of the Solent.

Economic impact

The decision to base the team in the UK, supported by the first round of the 2015 Louis Vuitton America’s Cup World Series (ACWS) hosted in Portsmouth, has already resulted in significant gains for the area and the UK as whole. The initial year of operation since the team’s launch in July 2014 to July 2015 include:

£47m economic impact (in Gross Value Added (GVA) terms) to the UK;

£59m media value (in advertising value equivalency (AVE) terms); and

730 full-time equivalent (FTE) jobs created across Great Britain, made up of

555 FTE jobs created via the team’s activities, made up of 87 direct jobs with the team, 320 jobs in the supply chain supported by the team’s expenditure, and another 148 induced jobs, resulting from employees spending a proportion of their additional income in the UK economy.

175 FTE jobs created as a result of the ACWS Portsmouth event, due to increased economic activity in its supply chain, and due to induced spending in the wider economy.

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Employment

Employing staff from the local area, including Portsmouth, Southampton and the Isle of Wight is essential for upskilling the local workforce and supporting local communities. Land Rover BAR advertises jobs locally to ensure that opportunities are widely available to residents in the Solent region. In April 2015, our staff travel survey showed that 27% of staff lived within 5 miles of the team base and a further 56% lived between 5 and 30 miles. In December 2015, 32% lived within 5 miles and a further 52% lived between 5 and 30 miles. Of our senior management team, 86% live within 30 miles of the team base.

By the end of 2015, Land Rover BAR employed 126 members of staff, across a number of different departments.

<table>
<thead>
<tr>
<th>Department</th>
<th>Positions active and filled end 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business support</td>
<td>18</td>
</tr>
<tr>
<td>Communications and marketing</td>
<td>12</td>
</tr>
<tr>
<td>Design</td>
<td>37</td>
</tr>
<tr>
<td>Fitness</td>
<td>3</td>
</tr>
<tr>
<td>Sailing Team</td>
<td>16</td>
</tr>
<tr>
<td>Shore</td>
<td>38</td>
</tr>
<tr>
<td>Sustainability</td>
<td>2</td>
</tr>
<tr>
<td><strong>Land Rover BAR Total</strong></td>
<td><strong>126</strong></td>
</tr>
</tbody>
</table>

*Table 1 Staff members across the different departments*

Based on employee residential postcodes at the end of 2015, **67%** of all staff lived in the local **Solent area around Southampton and Portsmouth**

By the end of 2015, Land Rover BAR employed 126 members of staff, across a number of different departments.
Education and the STEM agenda

We are committed to inspiring the next generation of designers, engineers, sailors, boat builders and sporting professionals in the region. We aim to engage 35% of the region’s schools through the base’s Tech Deck Education Centre by 2017. The Tech Deck will be opened and operational during 2016. This will be run in conjunction with the team’s official charity, the 1851 Trust. This was launched on 13 October 2014 with The Duchess of Cambridge being a Royal Patron of the charity, alongside Sir Ben Ainslie who is also a Patron. The 1851 Trust is supported by Land Rover BAR and aims to inspire and engage a new generation through sailing and the marine industry, providing young people with the education, skills and training to become innovators of the future and stewards of the marine environment.

Land Rover BAR are committed to working with young people to develop their skills, expand their experience and engage them with sustainability and the sailing industry. By the end of 2015, a total of 88 young people had been given a variety of opportunities to work with the team through apprenticeships, work experience and internships. Carrying on from 2014, 5 students were supported across the design team with their MSc university projects.

<table>
<thead>
<tr>
<th>Scheme</th>
<th>Number of positions filled</th>
<th>Departments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apprenticeship</td>
<td>5</td>
<td>Finance, Shore team, Marketing and Infrastructure and IT</td>
</tr>
<tr>
<td>Work experience</td>
<td>26</td>
<td>Various</td>
</tr>
<tr>
<td>Internship</td>
<td>4</td>
<td>Fitness, Sustainability and Design</td>
</tr>
<tr>
<td>Student apprentices working on Land Rover BAR projects</td>
<td>53</td>
<td>Shore team/ manufacturing</td>
</tr>
<tr>
<td>Higher education projects</td>
<td>5</td>
<td>Design, engineering MSc thesis</td>
</tr>
</tbody>
</table>

Table 2: Numbers of apprenticeships, interns and work experience

A total of 53 apprentice boat builders and engineers from the Marine Skills Centre at City College Southampton have built two specialised docking RIBs (rigid inflatable boat) for the team. The materials used in construction created a 20% saving in carbon across the two boats. They included flax (a plant material that has been used in marine applications for thousands of years); epoxy bonding resins with high biomass content (50+ %); and a recyclable PET core.

Inspiring young people

Team Principal, Sir Ben Ainslie became an Ambassador for the Laureus Sport for Good Foundation which helps young people by using the power of sport as a tool for social change. A group of youngsters from a local Havant project, Big World Impact, were invited to the new team base and were given an exclusive sailing lesson from Sir Ben and other team members. In partnership with the 1851 Trust and the Andrew Simpson Sailing Foundation, they were given an insight into the technology used and the teamwork required to succeed in sport.

1 In addition, one apprentice is currently working with one of our main suppliers, Green Marine, and another is working with Camber Catering.

2 Construction of the team’s docking RIBs involved 53 apprentices at Southampton City college.
Sustainable procurement

The team have established a Sustainable Procurement Code where, amongst other things we look to engage with local suppliers to reduce the transport miles of both goods and services, as well as to support the local economy.

At the end of 2015, the team had engaged with a total of 722 suppliers, although 95% of the total spend was with 88 companies. Of these 84% were UK companies representing 76% of the total budget spend. A smaller percentage were Solent companies representing 31% of the suppliers and 26% of the total spend.

It is one of the team’s top priorities for 2016 to ensure compliance with the Sustainable Procurement Code, screening key suppliers and working with them to help improve their sustainability management. A number of suppliers during 2015 were involved in the construction and fit out of the base in Portsmouth. As the organisation matures, the supply chain will develop further and close relationships can be built where suppliers play a major part in helping the organisation achieve its goals of winning the America’s Cup and achieving its sustainability goals.

A major area of success in procurement has been around office supplies, with achievements including:

- **Blinds**
  - fabric is made from 100% PET from plastic bottles, PVC free and low VOC

- **Tea**
  - unbleached, fairtrade and organic

- **Coffee**
  - ‘Planet saving coffee’- safeguarding the rainforests against loggers and ranchers.

- **Window and solar PV cleaning**
  - 100% rainwater used that is recycled and reprocessed saving 4225 litres of water

Around the office, the choice of suppliers has meant that through coffee procurement, **342 rainforest trees have been saved** from illegal logging and ranching and all printer and copy paper used at the team bases contain **100% recycled content**.
Creating partnerships

Applied Technology Department

The Land Rover BAR Technical Innovation Group (TIG), powered by PA Consulting, brings together British industry to contribute to the unique technical and sporting challenge of the America’s Cup. Land Rover BAR has a core of technical, design and engineering knowledge—but the broad sweep of modern scientific and technological advancement means that there will always be opportunities that lie outside our main areas of expertise for example, hydraulic systems, data transmission, aerodynamics.

The task of the TIG is to find and apply these technologies, and develop them to provide a race winning edge to the team.

The TIG will complement the existing design team with an external, world-class, multidisciplinary research and development group.

Marine Centre of Excellence

Land Rover BAR are one of the key partners in the establishment of UTC Portsmouth, a new state funded school based in Portsmouth that focuses on mechanical and electrical engineering, and advanced manufacturing. Public consultation events took place across the region in September and October 2015 and the newly established school will be taking admissions for years 10 and 12 from September 2016 onwards (UTC will open in September 2017).

36 TIG projects are currently underway, including 4 focusing on aerodynamics and 3 on hydrodynamics.
Wider engagement across design, innovation, sustainability, education and business

During 2015, we took part in over 74 events and seminars to share the Land Rover BAR story giving talks, taking part and hosting seminars and meetings across a range of topics including innovation, design, technology and sustainability to young people and business forums. Twenty two of these were organised by Land Rover BAR. In total the events the team participated in reached over an estimated 4600 individuals. The team also attended two of the major London boat shows with their own stand, at the British Marine’s London Boat Show and the RYA’s Dinghy Show. This was an opportunity to engage with several thousand attendees who were able to talk to team members, listen to the team members on the panels and presentations as well as interact with the boat show exhibits. The team has focused on actively engaging with the attendees at these events encouraging people to sign up to the Land Rover BAR pledge wall at the Dinghy Show.

Some other highlights of events the team has participated in include:

• Sir Ben Ainslie taking part in the launch of 100% Sport campaign with BT at UN Social Good Summit

• Professor Andy Claughton, Chief Technical Officer giving keynote speech at Engineering Trade Show

• Professor Andy Claughton, Chief Technical Officer keynote speech at British Engineering Excellence Awards

• Dr Susie Tomson, Sustainability Manager presenting ‘Behind the Scenes’ to the Hampshire Chamber of Commerce

• Dr Susie Tomson, Sustainability Manager, panellist at the Engineering the Circular Economy (IET) panel event

• Dr Susie Tomson, Sustainability Manager and Michel Marie, Project Manager presenting sustainable manufacturing and team approach at the World Yacht Racing Forum

The World Yacht Racing Forum presented an opportunity for the team to share their approach to many of the sailing world’s top sailors, marine designers and engineers in Geneva. Presentations and panel sessions covered the use of carbon fibre in marine manufacturing, across three separate areas:

• Analysis of the life cycle of our Testing Boat - T2, docking RIBs and a concept foiling chase boat.

• Assessment of alternative and recycled carbon fibre materials and resins, including the construction of test panels for evaluation.

• Carrying out mechanical testing and evaluation of the recyclability of a ‘recyclable’ resin.

At each ACWS event the team has committed to running an outreach event. In Portsmouth, the team participated in 11th Hour Racing’s sustainability evening, where Andy Claughton and Susie Tomson were part of a panel with Wendy Schmidt discussing sustainability and the opportunities presented by the team to address wider global issues. In Bermuda, the team engaged with the local young people at the sailing club before one of their regular evening training days. They were able to meet the team and discuss sailing and were handed a refillable water bottle and spent some time discussing where plastics ended up on the island and the problem of plastics in the sea and the importance of reducing plastic waste.
Social media is widely used for the team as a means to communicate with various interested parties. The team’s website has a specific area for sustainability, where case studies are posted and information across the whole sustainability programme is posted. Facebook, Twitter and Instagram are also widely used and #RaisingTheBar is the hashtag used for all sustainability posts. The team target a weekly post on a sustainability theme which is often backed up with video and photographic media.

Press releases, interviews and other means of sharing the sustainability story is also on-going and with our partners 11th Hour Racing, Low Carbon and BT the sustainability message is spread as wide as possible.

Articles published on the Land Rover BAR website in 2015 include:

- Leading the Solent Oyster Revival,
- Southampton Apprentices Push out the Boats for Land Rover BAR
- Raising the BAR – Delivering on Sustainability.

During the ACWS in Bermuda we joined children from the local sailing club and presented each with a refillable Land Rover BAR team water bottle and discussed plastics and how they are disposed of.
## Inspiring Excellence: progress against targets

<table>
<thead>
<tr>
<th>Objective</th>
<th>Target</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maximise sustainability within supply chain</strong></td>
<td>100% compliance with sustainable procurement code</td>
<td>Not achieved</td>
</tr>
<tr>
<td></td>
<td>100% suppliers screened - 50% suppliers with environmental management (ISO14001 or equivalent) in 2015 (increasing 10% per year)</td>
<td>Not achieved</td>
</tr>
<tr>
<td><strong>Engage local community</strong></td>
<td>35% of the Solent Region schools to attend the Tech Deck Education Centre by end of 2017</td>
<td>On track to achieve</td>
</tr>
<tr>
<td></td>
<td>Deliver a minimum of 4 annual open days where the public access the base – 300 per day x 4 = 1200</td>
<td>On track to achieve</td>
</tr>
<tr>
<td></td>
<td>Engage with local schools and community groups and the HE/FE sector to host interactive and educational visits where we inspire children and young people about sport, the sport of sailing and the America’s Cup – Y1 50 groups, maximum 50 per group = 2500 increasing by 10% per annum</td>
<td>On track to achieve</td>
</tr>
<tr>
<td></td>
<td>100 young people per annum to benefit from the collaborative programme with RYA (Royal Yachting Association) to engage a wider demographic in the sport of sailing through 1851 Trust</td>
<td>On track to achieve</td>
</tr>
<tr>
<td></td>
<td>Annual technical marine seminars will be hosted at the BAR HQ in Portsmouth</td>
<td>On track to achieve</td>
</tr>
<tr>
<td><strong>Wider engagement in sustainable sport</strong></td>
<td>100% events with outreach relating to sustainability</td>
<td>On track to achieve</td>
</tr>
<tr>
<td><strong>Build on design and technology skills</strong></td>
<td>50% staff from Solent area</td>
<td>Achieved (67%)</td>
</tr>
<tr>
<td></td>
<td>113 direct jobs plus 5 direct consultants in campaign first AC cycle. 2 direct jobs on base construction.</td>
<td>Achieved (126)</td>
</tr>
<tr>
<td></td>
<td>Engagement with 5 regional or specialist research and academic institutes</td>
<td>Achieved</td>
</tr>
<tr>
<td></td>
<td>2 companies given opportunity to have graduates working within BAR</td>
<td>Achieved</td>
</tr>
<tr>
<td><strong>Bring investment to the local economy</strong></td>
<td>80% suppliers from Solent area</td>
<td>Not achieved</td>
</tr>
<tr>
<td></td>
<td>80% investment in Solent area</td>
<td>Not achieved</td>
</tr>
<tr>
<td>Objective</td>
<td>Target</td>
<td>Progress</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Build local skills base</td>
<td>91 Work placements first AC cycle</td>
<td>On track to achieve (29 placements so far)</td>
</tr>
<tr>
<td></td>
<td>20 Interns first AC cycle</td>
<td>On track to achieve (4 positions currently filled)</td>
</tr>
<tr>
<td></td>
<td>14 Apprenticeships – for first 2 years of operations (multiplied by 3 = 42 over first 6 years)</td>
<td>On track to achieve (5 positions currently filled)</td>
</tr>
<tr>
<td></td>
<td>Engage with Highbury College, Southampton City College, Isle of Wight College for apprentice schemes</td>
<td>Complete</td>
</tr>
<tr>
<td></td>
<td>20 Training programmes first AC cycle</td>
<td>On track to achieve</td>
</tr>
<tr>
<td></td>
<td>Minimum of one national educational design-led competition per AC cycle</td>
<td>Not started</td>
</tr>
<tr>
<td></td>
<td>Applied Technology Department established by 2017</td>
<td>On track to achieve</td>
</tr>
<tr>
<td>Create partnerships</td>
<td>Support the development of a marine centre of excellence in the Solent Region</td>
<td>Achieved</td>
</tr>
<tr>
<td></td>
<td>50 local businesses engaged in Land Rover BAR technical seminars annually</td>
<td>Partially achieved – achieved through third party events</td>
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<td>Goring Hotel - events and hospitality staff training programme</td>
<td>Achieved</td>
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Driving Innovation

As a sailing team, harnessing the power of the natural environment to maximise performance is fundamental. At Land Rover BAR, the team use their position at the leading edge of high performance sport to drive innovation towards a low carbon economy, addressing the global issue of finite resources. They aspire to translate this into driving innovation, revolutionising efficiency in boat design and advancing the life cycle of composite materials. The team collaborate with Universities and research organisations to use technology, engineering and innovation skills to find future solutions for long-term issues in sustainability.

During 2015, the main focus was around:

• Implementation of an internationally recognised sustainability management system ISO20121
• Integrated sustainability monitoring and dashboard reporting tool development
• Life cycle analysis of training, race and support boat design and manufacture
• Testing and analysis of recycled and recyclable composites
• Concept fuel-efficient power boat design
• Implementation of secure data transition from training boats to base – the virtual chase boat
• Designing and building a BREEAM Excellent team base
• Establishing ecology pontoon to pilot native oyster regeneration

Project reports, articles and case studies were written for these projects. The following case studies are available on the website:

• A new blueprint for sustainable sports teams
• Carbon Fibre Life Cycle Analysis
• Carbon Fibre Recycling
A new blueprint for sustainable sports teams
The Olympic-inspired international standard, ISO20121, is a sustainability management system for events and provides a robust framework for the team to implement. The structured approach takes the team through the Plan-Do-Check-Act management system cycle, structuring the process towards prioritisation of the main sustainability issues and opportunities. These informed a process to set the team’s sustainability objectives, targets and actions.

Legal compliance is monitored regularly, which is combined with health and safety compliance at the team’s HSE meetings. The management system structure also helps identify the team’s interested parties, methods to communicate, sets out the importance of suppliers and the impact suppliers have on the team’s achievement of their sustainability objectives.

A major part of managing sustainability is the ability to track progress against objectives and targets. Quarterly sustainability reports are prepared which report on progress against objectives. Typically, sustainability data is disparate and owned by a variety of different individuals. The comprehensiveness of Land Rover BAR’s sustainability programme is no different and work has been done to develop an integrated reporting tool able to provide an overarching dashboard to track progress on an on-going basis.

Life cycle analysis
The team recognises the importance of materials that deliver the most sustainable solution in terms of embedded carbon and long term, whole life sustainability. The team has developed a whole life cycle approach to evaluate the impact of materials in the manufacture of the training and race boats and identify opportunities to improve. Typically, these boats have a limited life span, in particular the moulds and tooling used to manufacture the boats. The project identified the impact of the materials in the moulds rather than the final product which presents considerable scope for utilising recycled carbon with a lower environmental impact than virgin materials.

We applied the model to the production of our T2 Race Boat which showed that the moulds are priority areas for improvement – over 90% (measured by weight) of the materials used to build the boat were used in the mould production.

The team has taken steps to add increased quantities of recycled materials into the moulds and measuring the cost and environmental savings will be part of the on-going project that will continue through into 2016.

Our target is to develop a life cycle model to assess the costs and benefits – environmental and financial – of different materials at the various stages of their life cycle. This will enable designers and engineers to select from new materials with lower environmental impact during the design process, and plan for the boat’s end of life. The project is also working to build up a materials matrix of these newer ‘sustainable’ composites to enable these to be utilised in the LCA model to compare the performance across a number of metrics – mechanical, environmental and financial.

Carbon fibre recycling
The main challenge for any carbon fibre composite project is the disposal at the end of the material’s existing use. Carbon fibre recycling is limited and not widely commercially available. In the UK, a single facility exists which uses a pyrolysis technique burning the resin at high temperature and reclaiming the fibres which are currently in a short chopped form. The team has worked to identify alternative resin systems and has tested the mechanical properties of these resins which can be recycled. During 2015, the team carried out small scale testing, successfully managing to recycle carbon fibre from its resin composite in a process that offers a cleaner and more efficient way to recycle composites than pyrolysis, while retaining a high grade recycled product with minimal degradation. This is a significant finding in working towards a true, closed loop carbon fibre recycling process. Further work in this area will be undertaken during 2016.
Design for efficiency
A significant area of the team’s carbon footprint comes from the use of fuel in the chase boats. As part of the team’s technology innovation group, BMT NG were tasked and completed the development of a concept design for a chase boat that reduced the carbon emissions and fuel consumption by 50%. Further development of this project is dependent on available funding.

Data transmission and carbon savings
Reducing weight on the water will reduce the fuel consumed by the chase boats. Traditionally design team members would be on the water watching the boat’s performance and looking at the data from the monitoring equipment. With the faster AC45 test boats, the ability for effective tracking of data whilst on the move is limited and work has been done to deliver secure data transmission to the base and back to ‘Mission Control’. This area of the team base is analogous to that of a Formula 1 pit wall. This project has delivered both increased design team productivity and carbon savings.

Sustainable team base
The team base covers a number of sustainability achievements discussed in an earlier section of this report. These have been shared with multiple groups and are a major focus for visitors to the base. Early in 2015, during construction, the Prime Minister, the Rt Hon David Cameron made a visit to the team’s base to see it taking shape. Shortly prior to the team moving in, a construction media day was held where the media were able to hear from the architects, contractors, designers and sustainability team. A number of key articles were written highlighting the various aspects of the base which showcases how technology and innovation can deliver sustainability benefits.

Oysters and ecology
The innovative oyster project is on-going throughout 2016. Regular footage, both photographic and video, are posted to share the outcomes of the project and are helping to develop knowledge sharing across a network of similar projects. The research is being undertaken through a partnership with Portsmouth University’s Institute of Marine Science and is being supported by an MSc student. The findings will inform the Solent Oyster Restoration project planned by the Blue Marine Foundation and will hopefully be supported by a PhD research student should funding come available.
## Driving Innovation: progress against targets

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<tr>
<th>Objective</th>
<th>Target</th>
<th>Progress</th>
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<tr>
<td><strong>Share best practice</strong></td>
<td>5 case studies published annually</td>
<td>8 projects established and running, case studies and articles published on each project</td>
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<tr>
<td><strong>Collaboration</strong></td>
<td>Engage with National Composites Centre</td>
<td>Achieved and on-going</td>
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<tr>
<td></td>
<td>1-2 projects for sustainability collaboration with MSc/ PhD level each year</td>
<td>Achieved and on-going</td>
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<tr>
<td></td>
<td>Land Rover BAR will actively work with Portsmouth University, Southampton Solent University and the Isle of Wight College across design, innovation, marketing and sustainability projects</td>
<td>Achieved and on-going</td>
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Appendix A

Sustainability reporting framework

We apply the following principles when reporting:

• Relevance: Data will be reported appropriately to reflect sustainability impacts of Land Rover BAR
• Accuracy: Data will be as accurate as possible
• Completeness: All identified aspects will be disclosed to ensure a complete and valuable report
• Consistency: Methodologies and reporting techniques will be consistent so results are meaningful and reliable
• Comparable: Results will be presented a way that makes them comparable with other similar organisations and industry averages
• Transparent: Calculations, methodologies and other internal processes will be made available

Indicators

The indicators reported on have been selected based on the Global reporting initiative framework. If they are important to or are significantly influenced by Land Rover BAR and its activities; each aspect was assessed according to 6 criteria, one affirmative answer as a minimum was required in order to allocate the aspect as material:

1 Has the aspect already been determined as important to Land Rover BAR due to a specific process, sponsorship deal or government requirement?
2 Is the aspect likely to have a significant impact on the local communities surrounding the Team HQ?
3 Does the aspect influence public and stakeholder perceptions of Land Rover BAR?
4 Does the aspect have the potential to pollute or damage air, water or land?
5 Can BAR influence the aspect?
6 Is the aspect likely to have a long-term effect on Land Rover BAR?

A more detailed report on Land Rover BAR sustainability reporting is available which details the approach taken. Being only the second year of operation, largely spent in temporary accommodation, the team has reported as broadly as possible. Many reporting systems have been established over the past two years and will continue to be improved. This report has been peer reviewed by our Exclusive Sustainability Partner, 11th Hour Racing Inc.
To keep up to date with our latest sustainability news, please visit landroverbar.com/sustainability

All enquiries, comments or suggestions related to the sustainability report should be directed to sustainability@landroverbar.com

#RaisingTheBAR