

Curve Travel System

Best Awards

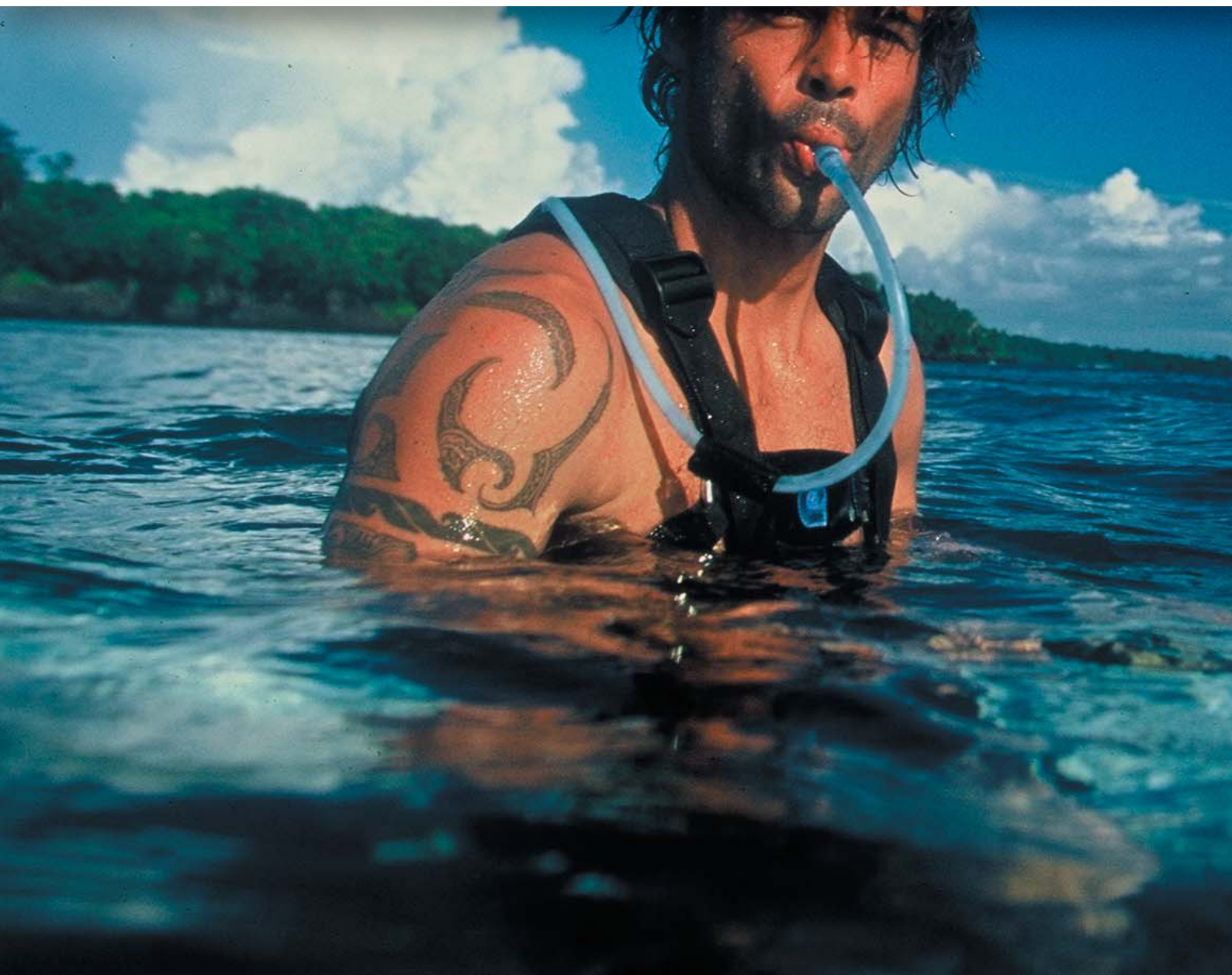


Project : Ingenio

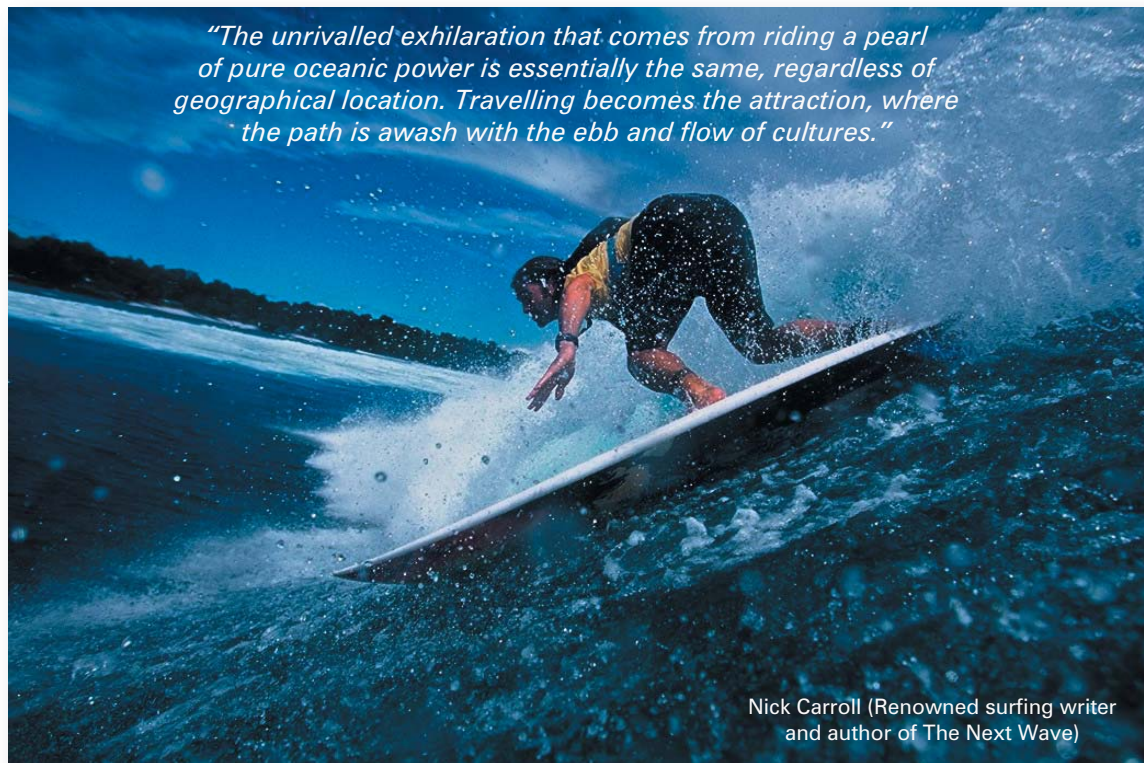
Client : Curve Surf

Project Code : 0801-16

Date : 27/06/07



Introduction



Background:

Curve Surf Ltd is a young progressive surf company from Auckland, New Zealand. The aim of the project was to develop a range of surfing equipment that could establish this start up company in the competitive international surfing market.

Project Context:

With the growing competition of commercial airlines and the development of new global positioning systems (GPS) and weather forecasting software, travel to remote and exotic regions is becoming more accessible to all surfers. Today, the search for new surf spots and the perfect wave is seeing surfers travel from their local break to the far corners of the globe.

This trend in surfing travel has led to a growing market of consumers that are demanding more performance, durability and flexibility from the equipment they use.

The Brief



"After too many cold and damp nights spent sleeping inside a dirty surfboard bag trying to sleep where the waves were breaking, we thought there's got to be a better way."

(Simon Winter – Director Curve Surf)

The main aim was to design and develop a surfboard bag to elevate the function and performance of existing products. The approach transformed the simple board bag into an organised 'system' for the travelling surfer, using design innovation to develop specific features and accessories aimed at making surfing travel easier.



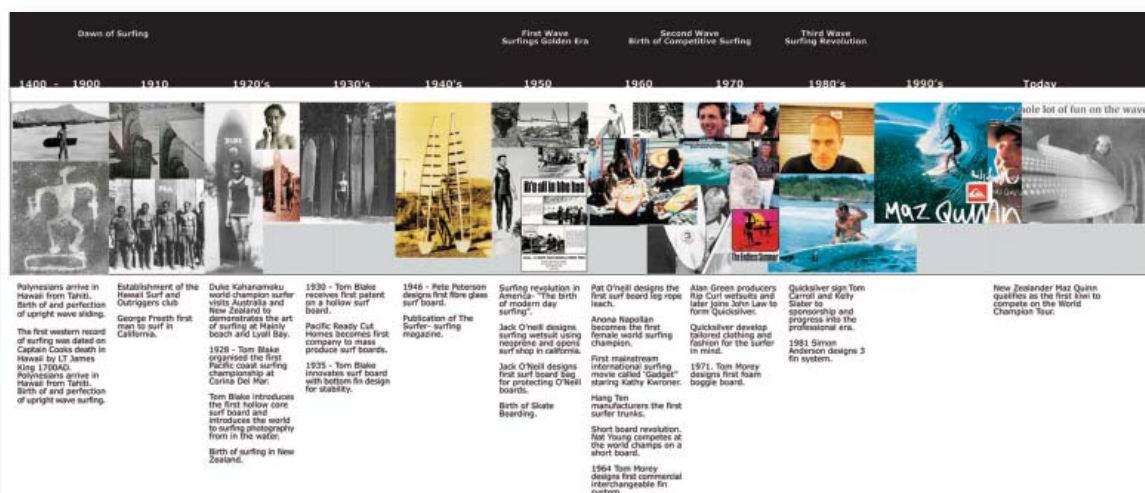
The Process

The Curve project started with the creation of a Product Development Specification (PDS) and an in-depth feasibility study which lead to a successful proposal to Trade & Enterprise (NZTE) for a Business Development Grant.

Because the client was in start up mode and did not have an existing product in the market, the PDS was developed to provide a robust development framework for implementing the project.

Applied Research:

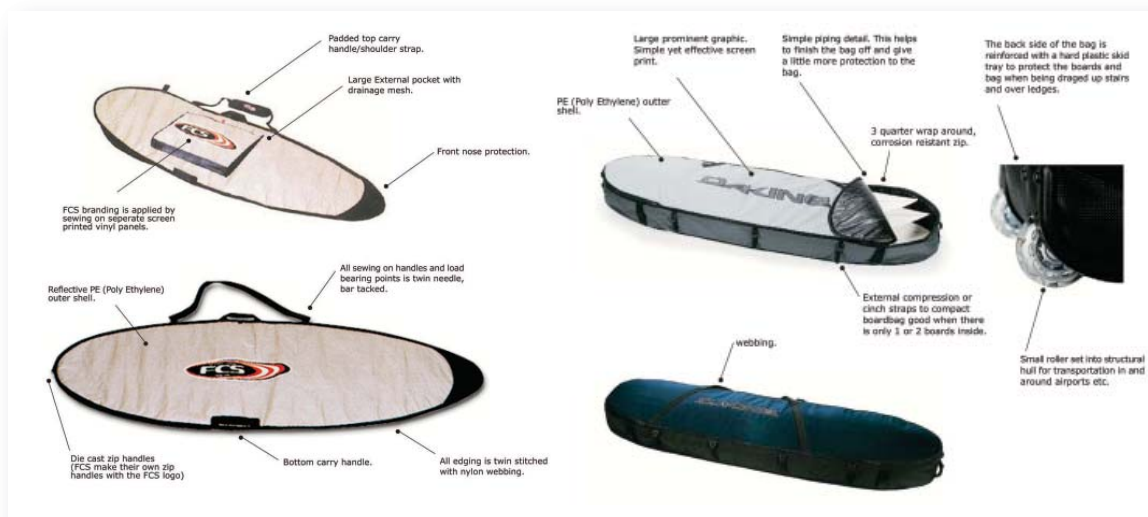
The first phase focused on understanding the current context of the surfing industry and defining both the technical and customer requirements for new surfing equipment. Research canvassed the history of surfing, new materials, trends, demographic and other factors in an effort to see where the sport had come from and where it was heading. With the product under development for 1-2 years it was important that it responded to future need.



A competing product assessment determined the performance of existing state of the art products. A wide range of different surfing products helped to develop the product structure and technical advantage this range would have in the market.

This identified that most of the products were produced using similar materials and configurations. It also highlighted that the different items such as the board bag, racks, sleeping mats, and tents were not designed to function effectively together.

The decision was made up front to develop a range of products concurrently that function effectively as a Surfboard travelling system. It would have to be a simpler, more practical and integrated range of products to deliver on the projects objectives.



The Product Structure

The different types of products that surfers use and take with them when travelling was closely considered and used to define the product structure for the range. This investigation highlighted that the system would need to accommodate a wide range of different products based on the nature of the surfing trip.

The real opportunity for the project was to design the system so that it can be configured to suit where ever you are heading, with each product in the range designed to be integrated or interchanged as and when required.

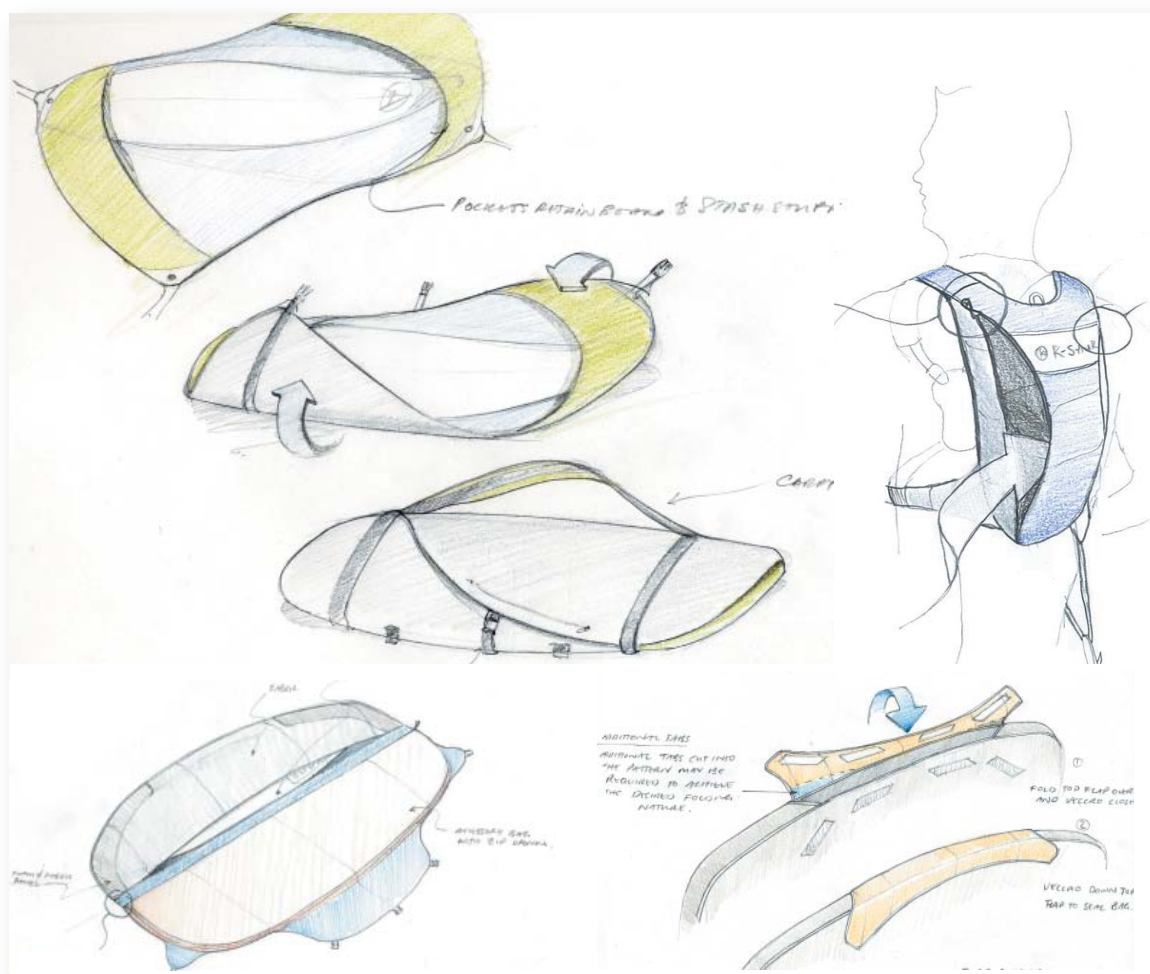
Product	Daily Surf	Weekend Surf	Week Trip	Ext. Trip
Board	●	●	●	●
Extra Board			●	●
Fins/SD	●	●	●	●
Wetsuit	●	●	●	●
Rash Shirt	●	●	●	●
Wax	●	●	●	●
Clothes/Towel	●	●	●	●
Roof Rack	●	●	●	●
Tent		●	●	●
Mattress		●	●	●
Back Pack		●	●	●
Extra Leashes			●	●
Booties			●	●
Passport/ID			●	●
Maps				●
Music		●	●	●
Cameras		●	●	●
First Aid Kit			●	●

Concept Design

Conceptual investigation focused on producing a broad range of concepts that could advance current function and performance of surfing products and work as a succinct range.

The primary purpose of the surfboard bag was defined as providing protection and transportation for a surfboard. Essentially surfers are just trying to wrap up their board much like conventional packaging. This basic concept of 'wrapping up' a surfboard became the basis for our conceptual design investigation. Instead of a basic sleeve that you slide on over the surfboard, the idea we selected to develop worked like origami, wrapping around your surfboard to protect it like a piece of bubble wrap. To remove your board, instead of unzipping it from the rear, you can simply unwrap it.

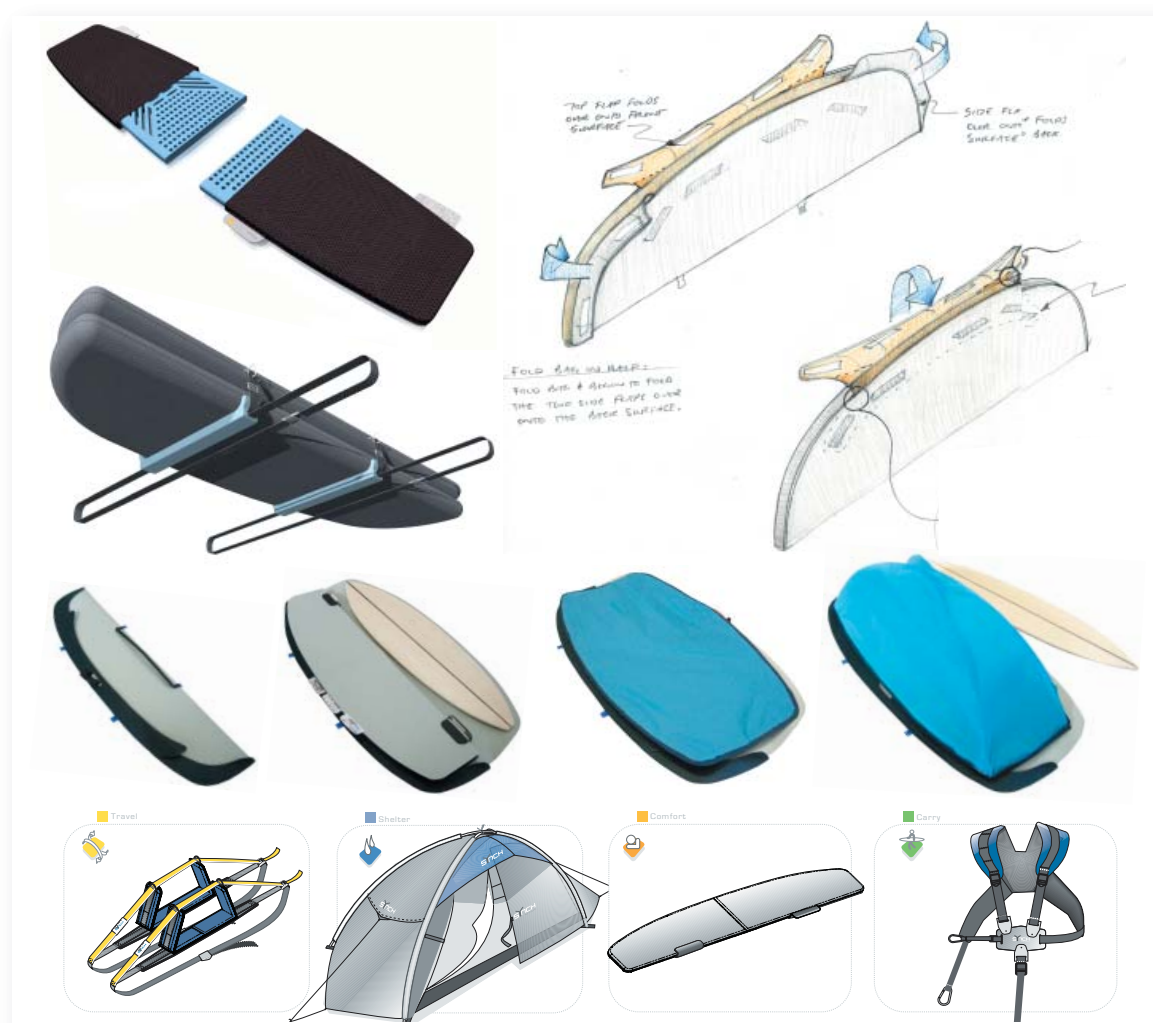
The 'wrap' created a board bag that transforms into a large beach or sleeping mat which forms the platform or foot print to either erect a tent or to rest on while watching the waves. The difficulty with this concept was that the inside of conventional board bags can become quite dirty. To keep the inside of this bag clean and free of wax, sand and dirt, the concept was developed to include a sealed dry compartment on the inside which can provide a clean zone for gear storage and a suitable surface to sleep on.



In order to systemise the surfing equipment a unique binding system was developed to provide an attachment method to clip together and interchange different products much the same way as binder inside a manila folder. In the board bag these soft binding details were sewn into the inside of the dry compartment creating a mechanism for each item to be correctly placed inside the bag.

Having established the basic concept for the system the focus moved toward developing a range of other surfing travel accessories that integrated with the board bag. Products that were developed included:

- **Surfing Tent** - providing shade and shelter on the beach
- **Sleepmat** - foam mattress pad for added comfort
- **Storage Bag** - for additional luggage
- **Roofracks** - for securing the boardbag on a range of transportation
- **Waterproof Backpack** - hydration system to be worn in the surf
- **Change Bag** - to separate wet clothing (i.e. wetsuit) from dry items
- **Hands-free Harness** - to effectively carry the loaded boardbag
- **Board Divider** - to separate multiple boards inside the bag.



Embodiment & Detail Design

Concepts were developed and embodied physically in 1:1 prototypes. Prototypes were sewn up and produced from both digital and traditional patterns. Initial prototypes were tested thoroughly to firstly validate the principal concepts and to learn more about each design.

Testing was undertaken to assess storage capacity, durability, level of protection, handling, impact resistance and performance. One of the key requirements for the product was for it to be able to withstand the common wear and tear caused by luggage handlers and the luggage conveyer belts during international travel. Prototypes were therefore tested by luggage handlers on the conveyer system at Air New Zealand to ensure the product was suitable for application.

Fully detailed manufacturing specifications were produced for each product which included a full bill of materials list, physical and digital patterns and assembly details for Curve Surf to manufacture the products. Several production samples were produced before the products were signed off for production.



The Solution

A significant development of existing board bags generated a simple travel system with a range of compatible accessories that enhance the function and performance of surfing travel and equipment protection.

The Overstayer Board Bag

The Curve project centred around developing a new protective board bag that created a platform to store and interchange a range of common surfing equipment into the one easy to handle product. Instead of unzipping from the end like conventional board bags, the Curve board bag also unfolds out flat from the side creating a beach mat to sit on, sleep on and erect a tent from.

Surfboards are held securely inside the bag via two compression straps that synch the bag closed. The wrapping function of the bag allows for storage of any size load whether its only one board or multiple boards. This closure method also caters for wider shaped boards like the fish-board.

Inside the bag there are two compartments, one that is 'wet' and one that is 'dry'. The wet compartment is for storing dirty surfing gear and surfboards, while the dry, water resistant 'clean-zone' is for storing your other travel gear. Inside this dry compartment are the two bindings that provide the connection points for clipping other Curve products into the bag.

The board bag is produced from 900D PU coated nylon and 10mm EVA foam core. Reinforced protection is applied to the nose and tail region which are the two primary areas for board damage. There are three sized bags available; small, medium and large catering for small shortboards right through to longboards (Malibu).



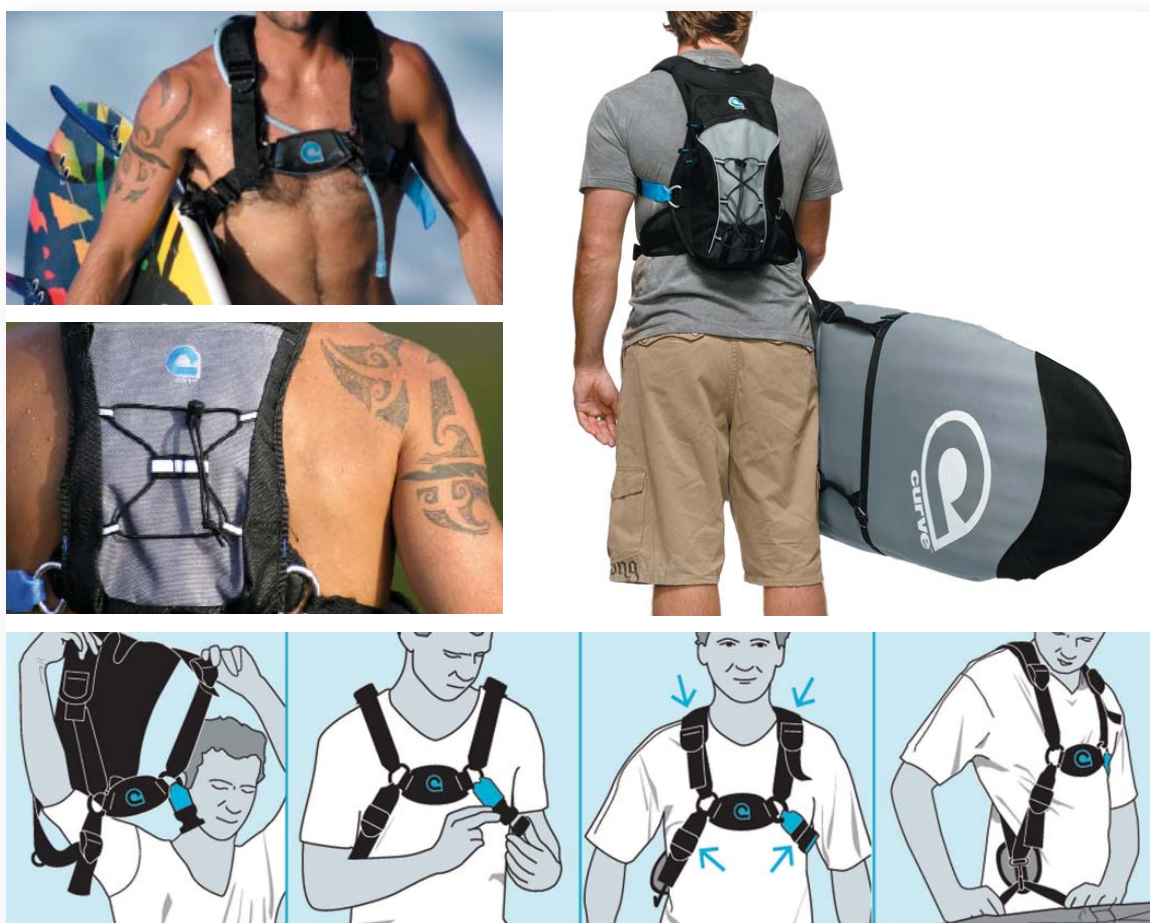
Sleepmat & Tent

Part of the project was the design and development of a tent and mattress that clip into the bindings inside the boardbag. The tent is a two person lightweight nylon shelter that is designed to be stored inside the 'dry' compartment in the bag, and erected off the opened out board bag for the more intrepid travellers. The mattress is a durable 'mirror cell' foam pad that also clips into the tent or dry compartment in the bag.

Hands-free Harness & Backpack

The proposition of loading more gear inside the bag meant that an entirely new method of transportation was required. The harness is based around a hard-soft chest plate which distributes the load evenly between each shoulder. The innovative aspect is that it allows the user to walk without actually carrying the board so they can have both hands free.

The harnesses was prototyped and tested carrying over 15 kg weight over a 80 minute period. Board bags connect to the harness via a small hook-on connection. The built-in backpack provides gear storage and includes a hydration system. The harness has been designed in three sizes: the Fatboy, Dayman and Waterman. The Waterman is a slim line version specifically designed as a hydration system to be worn in the water while surfing.



Lockdown Roof Racks

The Lockdown roof rack is a simple system that uses a single loop to pull both the roof rack and surfboard down onto the roof of a vehicle. The roof racks are made from 25mm EVA foam padding, to protect the rails of the surfboard, and have a breaking strain of 350kg.

Conventional roof racks work by strapping the boards together independently from the roof of the car. This approach does not apply enough downward force to effectively secure the boards on the roof.

The Curve system works by configuring the strapping to create downward force to eliminate surfboard movement. The racks work in three ways, either by connecting through the car doors, to the vehicles' loadbars or to the vehicles gutters. The racks can hold up to 6 shortboards or 3 longboards.



The Result

The first systemised travel system that helps surfer seek, find and surf where the waves are best. The project developed several new surf related travel products and has helped establish Curve as one of the up and coming surfing brands in the Australasian market.

The range is currently being sold on-line and in surfing shops throughout New Zealand. Recently the Curve system was exhibited at the Surf Expo in America where it was one of the top ten brands selected for release under the expos 'Launch' initiative. As a result the product is now being sold into the American surfing market.

Closing comments from the client:

"Our ambition was to bring to market a bunch of products that helped to smooth out some of the rough edges that can be experienced during life on the road with a surfboard. NZ surfers as a group are renowned for their core travel credentials, so the concepts brought to the table were based on a level of core functionality along the lines of 'make it work first and look pretty later'.

It's almost surreal to look back now and think how original and raw those initial product concepts were, and how the design process built them from briefed words and sketches into filling space on shelves in some of our finest action retail stores. The design teams approach of casting the net wide and thoroughly interrogating each concept provided the fertile ground and systemised approach which ensured that the uniqueness of the concepts was fully leveraged. Modelling, testing, and most of all hands on involvement and documentation in the prototype stage meant that we weren't just left holding someone's best intentions, but a solid, unique and dare I say it.....even good looking product line.

Cheers to mother design for bringing us a polished range of knock out products that has now made its way into the US market, and given us the confidence to use the tag line Curve: smarter than your average gear."

Simon Winter - Director of Curve Surf

