



“Racing for the future”

Formula Zero (2003 - 2011)

Promoting well to wheel zero emission technologies through motorsports



FORMULA**ZERO**[®]

RACING FOR THE FUTURE

Dear reader,

By way of this special booklet, we want to let you know we are shutting Formula Zero down and pay special attention to the many highlights of what we have achieved during the last eight years. Ending Formula Zero was one of the hardest decisions to take, but as the world around us is changing rapidly, it's time to start new challenges.

We are very proud of what we accomplished. From building our prototypes, pretesting at the AutoRAI in 2005, the record attempts in 2006, the World Premiere of fuel cell racing in 2008 and creating "Electric Experiences" with circuit days and rally events in 2009 and 2010.

Motorsports is a very appealing way to bring zero emission mobility into the public eye. It is the perfect platform for accelerating the introduction of sustainable energy and automobile technology, and creating consumer awareness besides enthusiasm for it. Ultimately we succeeded in our mission; "to promote well to wheel zero emission technologies through motorsports". We have reached millions of people with our positive message about a sustainable future. We were also very early to inspire the motorsports industry to show that zero emission and speed can go together.

The last two years have been difficult. The world has changed since our World Premiere in Rotterdam, 2008; the crisis started, projects were called off and the attention for hydrogen shifted towards batteries as a storage for sustainable energy. The vision of the car industry rapidly shifted towards battery electric vehicles (BEV's) as well, a change we were not well positioned for.

It took time to adapt to the circumstances, but we have been successfully organizing promotional events with BEV's. Together with former Formula 1 driver and 24 hours of Le Mans winner Jan Lammers, we also developed a business plan to establish a battery electric single seater racing series. But after ample consideration, we concluded that this plan would not lead to a positive financial result in the near future. Therefore we decided to shut down the company.

We are sorry to let Formula Zero go, also because there were a few moments that things could have worked out very differently. Nevertheless, we accomplished our mission of bringing zero emission technologies to a higher level and gain public attention. Formula Zero has been a symbol for a paradigm shift towards sustainable motor sport: away from "how can we extract maximum power out of a litre of fossil fuel" to "how fast can we go using zero emission technologies". We have been successful in many ways, and now it's time to use our talents for new ventures.

Experiments like these are very important for our common future. There for we want to thank everyone who has supported Formula Zero. It is people like you who earn our deepest respect.

**Best wishes,
Godert van Hardenbroek and Eelco Rietveld**



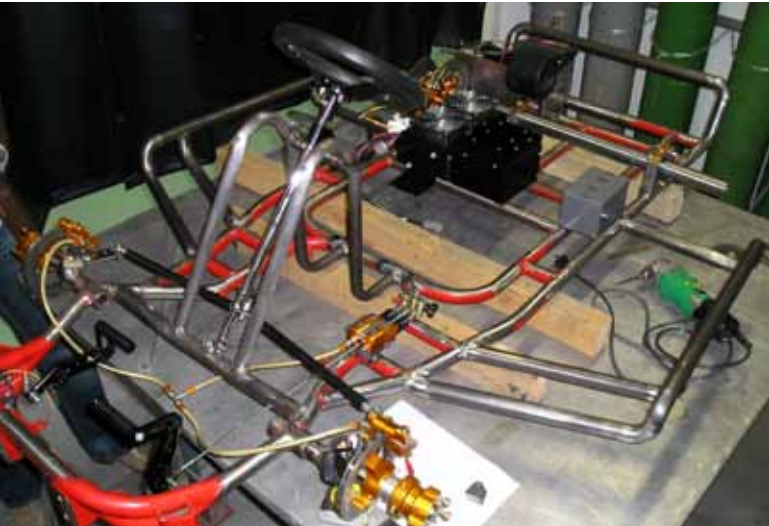
**Godert van Hardenbroek (left)
Founder & Managing Director**

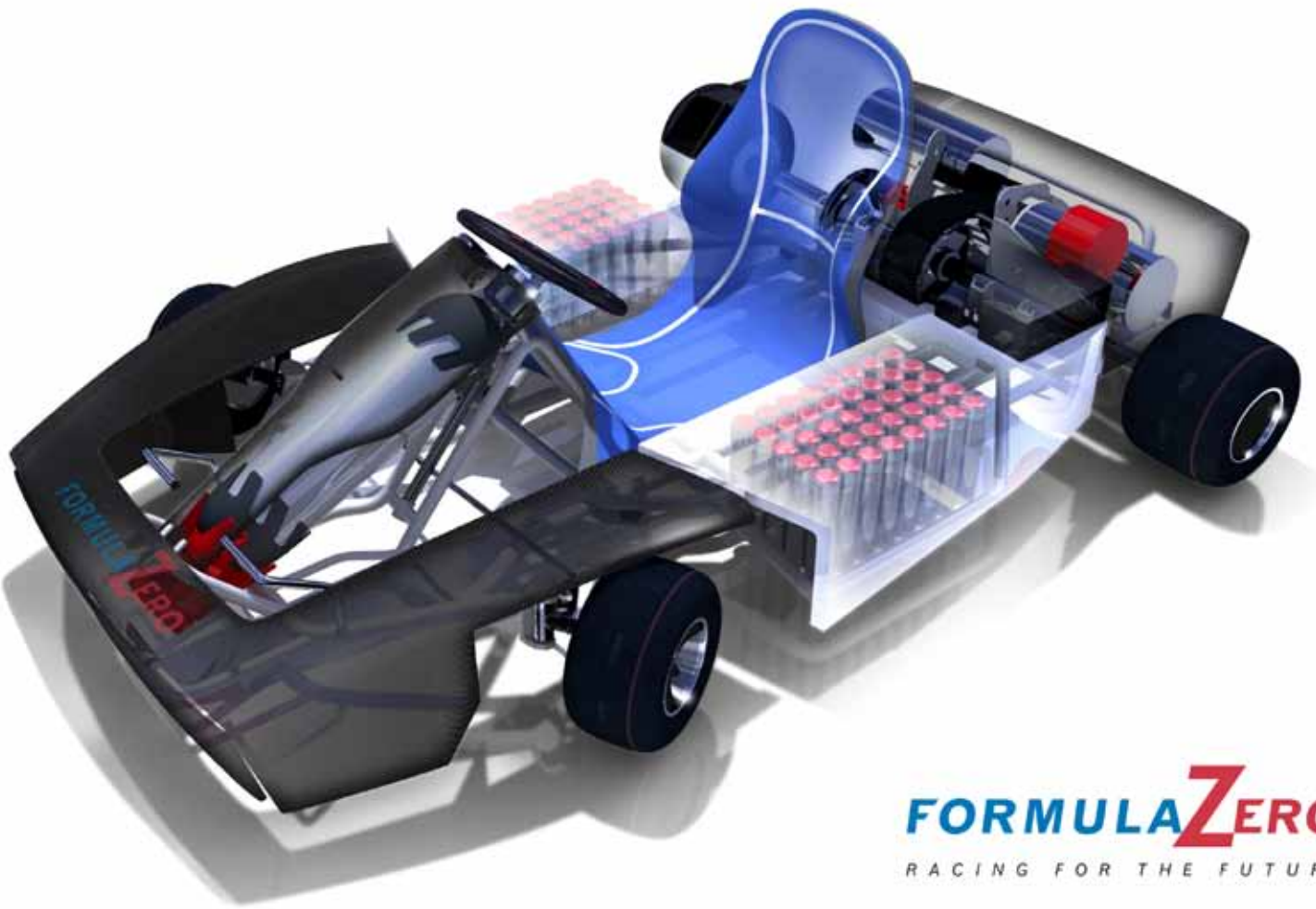


**Eelco Rietveld (right)
Founder & Racing Director**

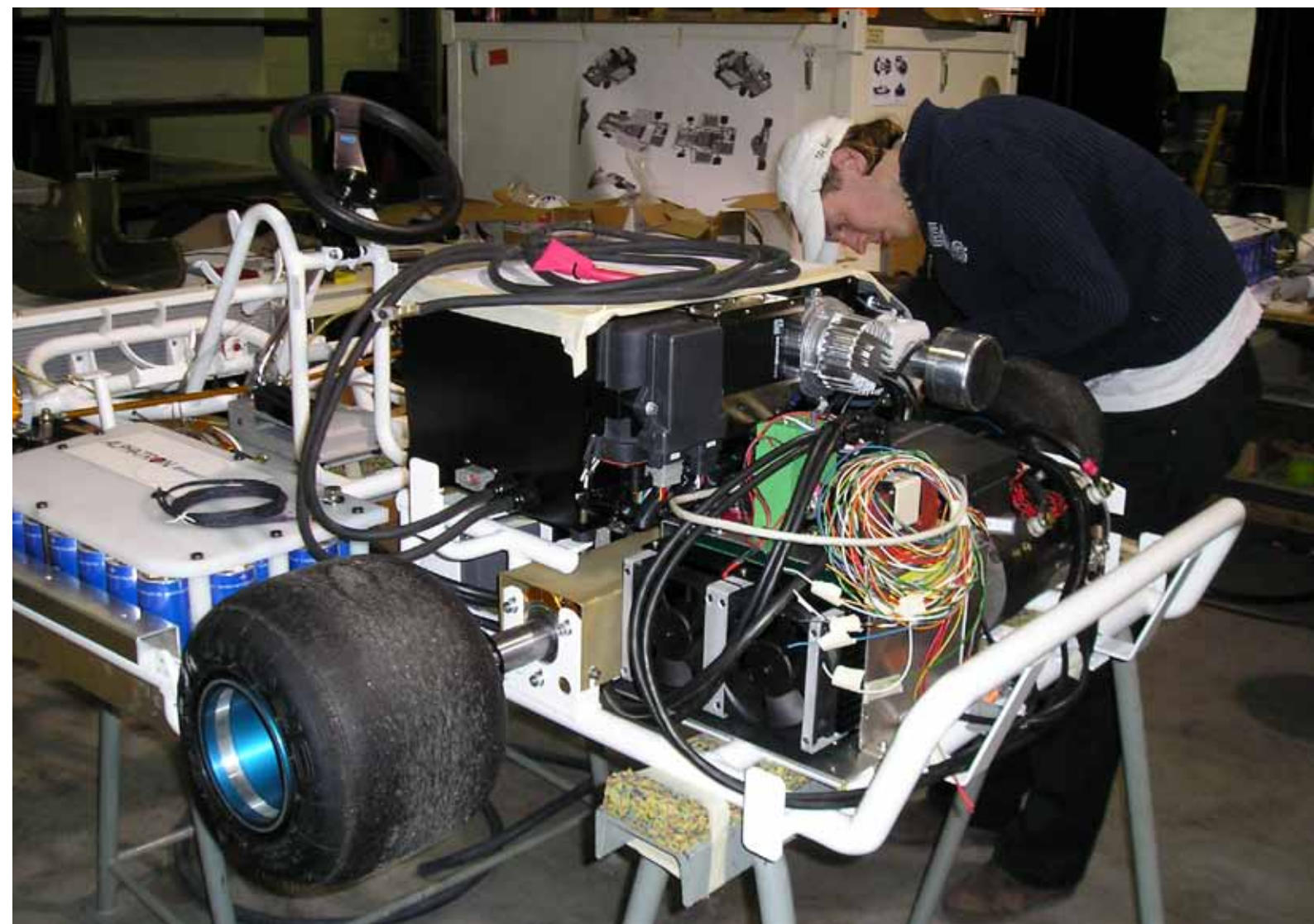
Building & Presenting

After establishing Formula Zero on the 20th of June 2003, Godert and Eelco worked with many enthusiasts to build the 'Mark 1', Formula Zero's first static prototype which was made public on the AutoRAI 2005. Building the 'Mark 2' already started and the opening of the Rotterdam office and test centre was a logic step towards bringing their vision to reality.

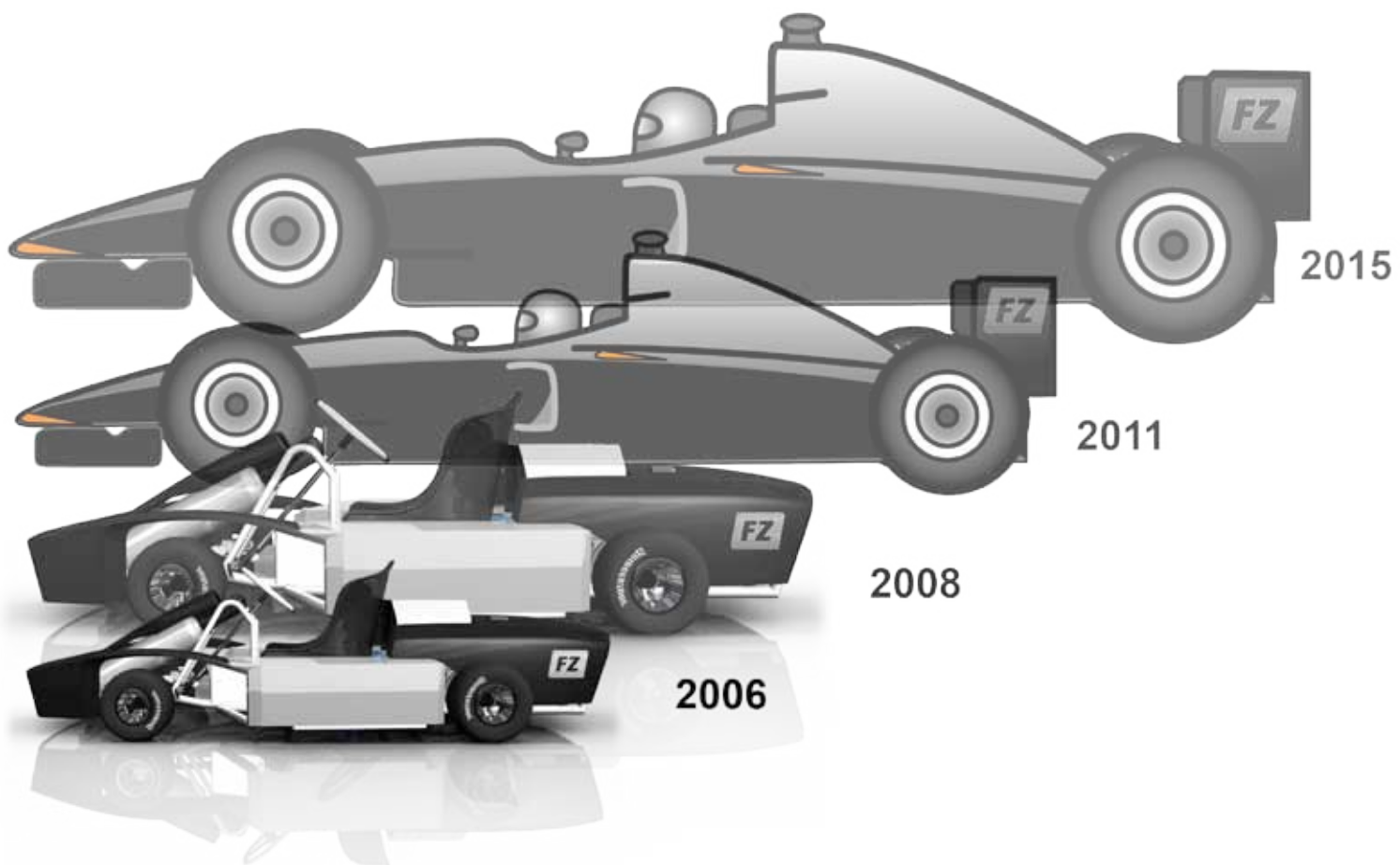




FORMULA ZERO[®]
RACING FOR THE FUTURE







A record breaking machine

Formula Zero recorded an official FIA 1/8 mile speed record with the 'Mark 2' hydrogen fuel cell powered vehicle. They also attracted much attention with demonstration runs, like the one with former Dutch politician Wouter Bos.









World wide attention

Up to 2008, Formula Zero attended many events, acquired worldwide media attention through internet, printing, television and even a Discovery documentary. The mission of promoting zero emission technology was at full speed!









“Shell Hydrogen was already a sponsor of Formula Zero when I took over as CEO in 2005. I was immediately impressed by the energy and the professionalism of Godert and his team. We joined up at a number of hydrogen/fuelcell conferences and events across Europe – and Formula Zero pulled the crowds everywhere, attracting political and business leaders and an enthusiastic public. I will always remember my own Formula Zero drive in the centre of Brussels. I moved to a new role in 2009 but have continued to be encouraged by the development of fuelcell vehicles and hydrogen supply – particularly in Europe. Concepts like Formula Zero, led by visionaries like Godert, really helped keep this important future fuel pathway in the public eye. Well done – and I look forward to Godert’s next adventure!”

Techniek Karten met een brandstofcel

■ verwisselbare waterstoftank ■ opslag kinetische energie ■ formuleklasse in 2012



WATERSTOF IS TOF!

Probleem: het rijden op elektriciteit gaat gebukt onder een duf imago. Oplossing: introduceer de brandstofcel in de autosport. Het Nederlandse Formula Zero zette de eerste stap, en als het aan de initiatiefnemers ligt zullen er nog vele volgen.

HET IS INNIDDELSK gevestigd bekend dat waterstof voor een veelzijdige toekomst voorwaarde is. Het kan worden toegevoegd aan een bestaand systeem met de zekerheid uit de lucht en er heeft elektriciteit veel van een alternatief mee aan te bieden, terwijl de uitlaat bijna geen warmte afgeeft. Deze kansen zijn het de reden dat de groei aantrekkelijk wordt voor energiebedrijven die in een - historisch langzaam - innovatieve verbruikersmarkt in een brandstofmarkt wordt 60% van de energie die in waterstof bestaat uit kinetisch energie. Het is een zeer uitdagende markt die niet alleen de kans biedt op een nieuwe manier om te produceren voor aandrijving van de wagen. Het is ook wanneer je de bestaande technieken in een breder perspectief beziet, van de winning van de brandstof. Het is niet alleen de uitlaat, maar ook de opslag van de energie (1) en (2)



De meeste elektriciteit wordt opgeslagen in lithium-accu's met weerstanden van het stroom. De waterstof is in een tankje op de voorzijde (links).

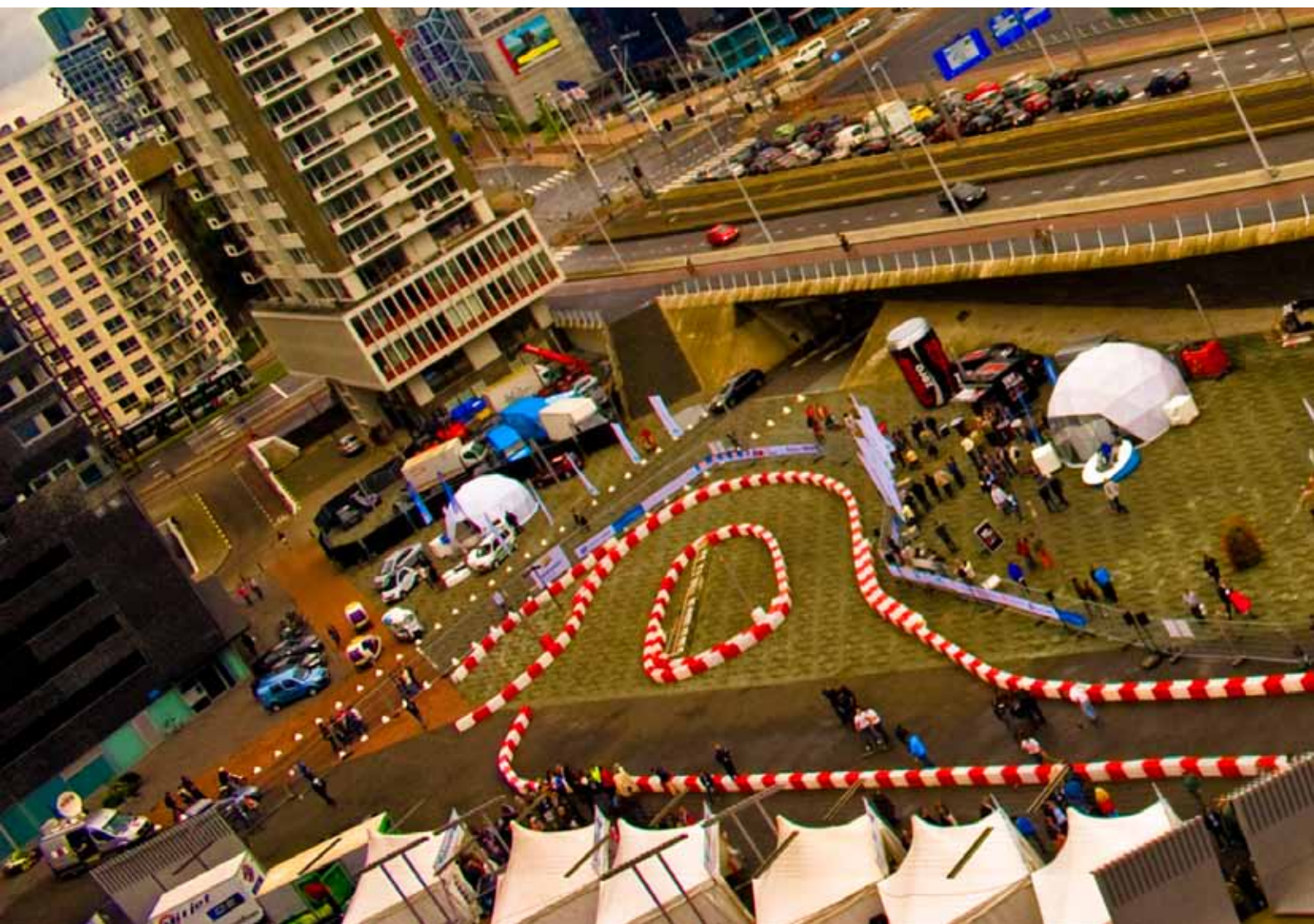
Het is niet de uitlaat, maar de opslag van de energie die de meeste aandacht verdient. Het is de uitlaat, maar de opslag van de energie die de meeste aandacht verdient. Het is de uitlaat, maar de opslag van de energie die de meeste aandacht verdient.

Duncan Macleod, former CEO of Shell Hydrogen
(Sitting in Mark 2, photo above)



World Premiere

Formula Zero's vision became reality in August 2008. World's first zero emission Grand Prix with hydrogen fuel cell powered vehicles took place in the city center of Rotterdam, the Netherlands. Six university teams from across the world participated.







2008 CHAMPIONSHIP

WERELDPRIMEUR: ROTTERDAM FZ-GP
22 & 23 AUGUST 2008
WILLEMSPLEIN ROTTERDAM
AAN DE VOET VAN DE ERASMUSBRUG



FOTO: HANS DE LIJZER

EERSTE WATERSTOFCEL KAMPIOENSCHAP TER WERELD
ERVAAR WATERSTOFRACERS, LIVE! HELE DAG GRATIS TOEGANG!
KIJK OP WWW.FORMULAZERO.NL VOOR PROGRAMMA & VIP KAARTEN

ultimate motorsport



ROTTERDAM CLIMATE INITIATIVE

















Hydrogen-powered cars meet in championship race

Sat Aug 23, 2008 11:53am EDT

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ROTTERDAM (Reuters) - Six international university teams competed in the Dutch city of Rotterdam on Saturday in what was billed as a motor racing championship for hydrogen-powered vehicles.

The "Formula Zero" series aims to demonstrate the viability of zero-emission

HS AUTOT

Keskiviikkona 10.09.2008
Nimipäivät: Kaleva, Kalevi Onnittele E-kortilla

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Etusivu

Autot

Vikasarja

Tallienki

Naisautoilija

Näillä Suomi ajoi

Moottoripyörät

Alfa Romeo

Formula 0 -kisassa ei pala bensa

Julkaistu: 9.9.2008 00:00
HELSINGIN SANOMAT

Formula 1 -kisojen rinnalle on luokka – Formula 0, siis nolla. ajettiin karting-radalla Rotterdamissa.

Topsnel zonder geluid

Rotterdam heeft met races op waterstof een wereldpremière

Geen heulende motoren die rookend, maar wel wagenjes die van uur gaan in nog geen vijf seconden.

Wat is mogelijk en zaterdag is een van de met van de Erasmusbrug aan de Willemplein (het is de Formula Zero race). Een autoontwerper van over de hele wereld gaan met zelfgebouwde waterstofkarts - de 'zero' met waterstofkarts. Rotterdam heeft daarvoor een wereldpremière te maken.

Op de RDM-campus op de Hoopstraat wordt gisteren nog voorlopig geëxperimenteel met de wagenjes. Daarna worden ze onderworpen aan een strenge veiligheidscontrole op maar liefst 180 punten. 'Veiligheid staat boven alles'. 'Veiligheid staat boven alles'. 'Veiligheid staat boven alles'. 'Veiligheid staat boven alles'.

Ook het team van de TU Delft is druk bezig de laatste hand te leggen aan hun waterstofkarts. 'In totaal hebben 23 studenten hier

Race

Over twee dagen wordt er op diverse plaatsen gereden. Deze zijn terug te vinden op [www.formulazero.nl](#).

meer dan een jaar aan geweest. 'Het bouwen ervan uitloopt hoe het nu werkt.' De waterstof reagent met de bouwlucht. Bij de eerdere editie van de wedstrijd kwam daar water en schone energie voor. Die gebruikt elektriciteit van de stroom van de stroom van de motor aan te krijgen. Het water is overgevoerd worden. Het water is overgevoerd worden. Het water is overgevoerd worden.

'Wat opvalt is dat er weinig mensen meewerken aan het bouwen van de waterstofkarts. 'Ik was van de waterstofkarts. 'Ik was van de waterstofkarts. 'Ik was van de waterstofkarts'.

'Dat is moeilijk te zeggen'.



Er wordt nog druk gewerkt aan de wagenjes, die vanaf morgen op het circuit van de Erasmusbrug gaan rijden om de eerste plaats.



CO2-vrije karts in Rotterdam

Deze een waterstof- en elektrisch aangedreven karts van de Formula Zero team. De karts zijn gebouwd door studenten van de TU Delft. De karts zijn gebouwd door studenten van de TU Delft. De karts zijn gebouwd door studenten van de TU Delft.



FORMULA ZERO Studenten van over de hele wereld scheurden gisteren met hun door waterstof aangedreven karts over het Willemsplein bij de Erasmusbrug in Rotterdam. Daar wordt het Formula Zero Championship verreden door milieuvriendelijke kartjes die alleen maar zuiver water uitstoten. FOTO MARCO DE SWART

10.09.2008 9:15
Первые в истории гонки болидов на вод августа в голландском Роттердаме.



Студенты из различных университетов, демонстрировали возможности сконструированных самостоятельно болидов на водородном топливе. Это первые в истории гонки



Races & Demonstrations

Many more demonstration and races have been held since the World Premiere in August 2008, like the 2009 European Championship on go-karting circuits in Europe and demonstration races in Amsterdam (the Netherlands) and Turin (Italy).



I tre sfidanti del Pd "Bresso candidata"

La presidente: con me il popolo delle primarie



La presidente della Regione alla guida di un go-kart ecologico

pagna elettorale». E così spunta il decalogo della Bresso, dieci questioni programmatiche da arricchire con proposte e suggerimenti da inviare al gruppo di lavoro che sta costruendo il programma attraverso mail, sms e ogni altro strumento di comunicazione. Un modo per andare ol-

laicità, per altro molto applaudita dai delegati. E così ricorda a Casini che «la sperimentazione della pillola abortiva l'ha chiesta il centrodestra con l'Udc dentro la giunta Ghigo», e che sul caso Englaro «trovo assurdo che si critichi Berlusconi perché non rispetta le decisioni della magistratura e noi

cordo serio di programma con l'Udc - «non vogliamo costruire fotocopie del passato e nemmeno aggiungere qualcuno ma costruire insieme un programma nuovo», spiega Morgando - e con gli altri partiti. Certo molto dipenderà anche dall'evoluzione del quadro politico nazionale e dall'esito del corteggiamento di Silvio Berlusconi a Casini. E forse non è un caso che ieri Enzo Ghigo, coordinatore regionale del Pdl, attacchi duramente la «zarina» - «una presenza scomoda per il Pd viste le sue posizioni ultralaiciste» - ed eviti di prendere

IL 25 OTTOBRE
«Tutti i militanti potranno contribuire al programma»

posizione contro l'aut aut di Casini su Cota presidente. E il leader leghista liquida Casini - «non abbiamo paura dell'Udc» - ma va all'assalto della Bresso che «cerca di fare i fritti misti, dalla sinistra radicale all'Udc, pur di governare».

Ma nel centrosinistra c'è eria chi chiude la porta in faccia







FORMULAZERO

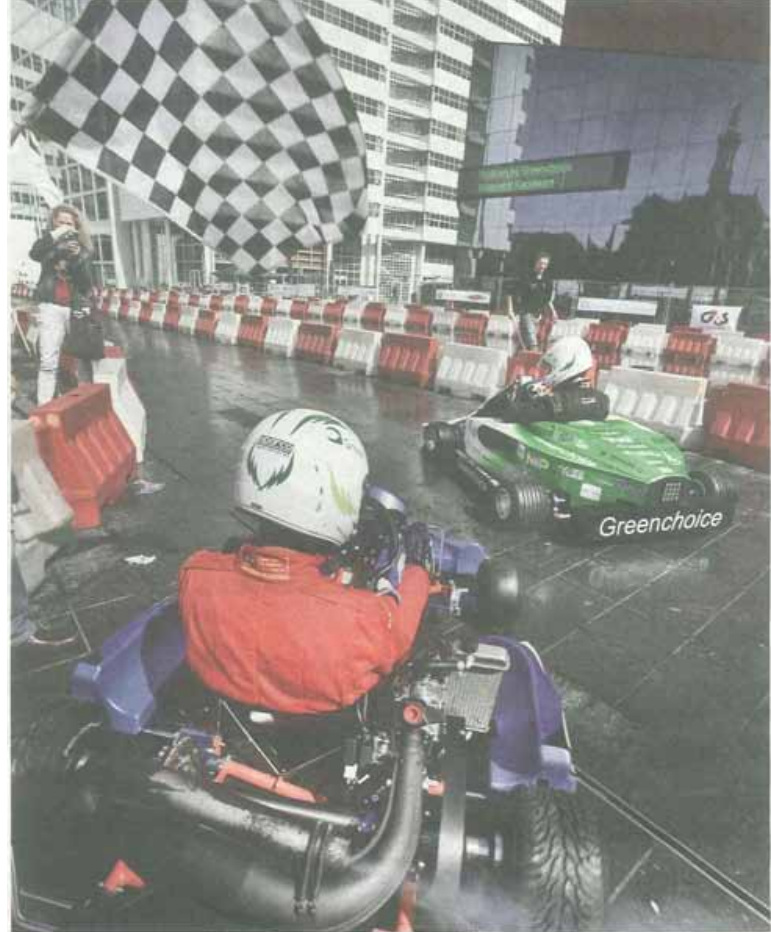
Alcañiz, 2-3 septiembre 2009

Circuito de Karting Motorland Aragón
De 10 a 18 horas.





...en kart op waterstof nam het gisteren op het Spuiplein in Den Haag in vijf races op tegen een benzinemotor. De Greenchoice kart, die is ontwikkeld door studenten van de TU Delft, was vier keer de beste kart van de race. Het team van de TU Delft, met als leider de organisatie van de Haagse race.



Kart op waterstof wint het van benzinemotor

Alternatieve brandstof hoeft niet ten koste te gaan van de snelheid. Dat bewees het Delftse studententeam Greenchoice Forze van de Technische Universiteit Delft op

het Spuiplein in Den Haag. De studenten raceten met twee karts over het plein, één op benzine, één op het duurzame waterstofgas. Ze reden vijf rondjes. De wagen op het vluchtige gas deed daar 23,9 seconden over, een fractie van een seconde korter dan de kart op de fossiele brandstof. De waterstofkart was

niet alleen sneller, maar ook schoner. Hij stoot geen schadelijke uitlaatgassen uit, maar waterstofgas. De studenten organiseerden het evenement samen met de gemeente Den Haag, die zich wil profileren als centrum voor duurzame voertuigtechniek.

FOTO ROGER DOHMEN



Electrifying

2010 was the year of organizing 'electrifying' events with battery electric vehicles in co-operation with energy suppliers, governmental organizations and other businesses which supported driving electric. Formula Zero also organized a rally with electric cars in the Rotterdam area.







Who we have worked with

There are many companies, employees and volunteers we have worked with during the last eight years. We would like to thank all of them bringing their enthusiastic efforts into Formula Zero. We would like to pay some special attention to the core employees.

A group photo of the 2006 - 2008 core team members, from left to right: Eelco Rietveld (Racing Director), Kim Taylor (Public Relations), Bo Ridder (Technical Specialist), Godert van Hardenbroek (Managing Director) and Eiso Vaandrager (Event Manager).





Above: Founders Eelco and Godert

New members starting in 2007 - 2008, from left to right: Nicole Rudischer (Sales), Sam Prest (Competition Manager) and Tim Biesbrouck (Public Relations).



What people say

“Recognising that motorsport pioneers many automotive technologies; Formula Zero has taken the first and most courageous step towards bringing hydrogen and fuel cell technology into competitive motorsport, this legacy will remain in the positive impression of the spectators as well as the unique learning and knowledge acquired by the engineers who developed the vehicles who are currently continuing to develop these technologies for public use in years to come. It has been my pleasure to collaborate with the organisers and expect to see many positive outcomes of their work in the future.”

**Alistair Wardrope
Mechanical Engineer at Atkins**

“Formula Zero has been an important, but most of all exciting and fun chapter in my life. I have gained incredible experience on how to operate as a multidisciplinary team on a challenging and innovative project. I learned that with the right application of technology and human effort, sustainability and fun go hand in hand very well. Formula Zero will always inspire me to seek for sustainable solutions, and give me confidence that they can be found. Even if you have to be a pioneer and create these solutions yourself!”

Edgar van Os, founder Greenchoice Forze, winner of the first Formula Zero Championship

“Some people deserve to have success. The vision, enthusiasm while at the same time the down-to-earth character of Formula Zero I have always found appealing and inspiring. It’s proof that business sense, kindness and humor can go together.”

**Salem Mourad
CEO Altramotive**

Thank you!

We have been supported by many companies, institutions and volunteers. We want to thank all of them for their support during the last eight years. Thank you!



Photos by: Tim Biesbrouck, Evert Jan Daniels, Richard van 't Hof, Carl Kerchmar, Peter Luckel, Emile Nijssen, Karin Reijnen, Eelco Rietveld.

