



Solutions for a Better Tomorrow

Safety moment / DEI

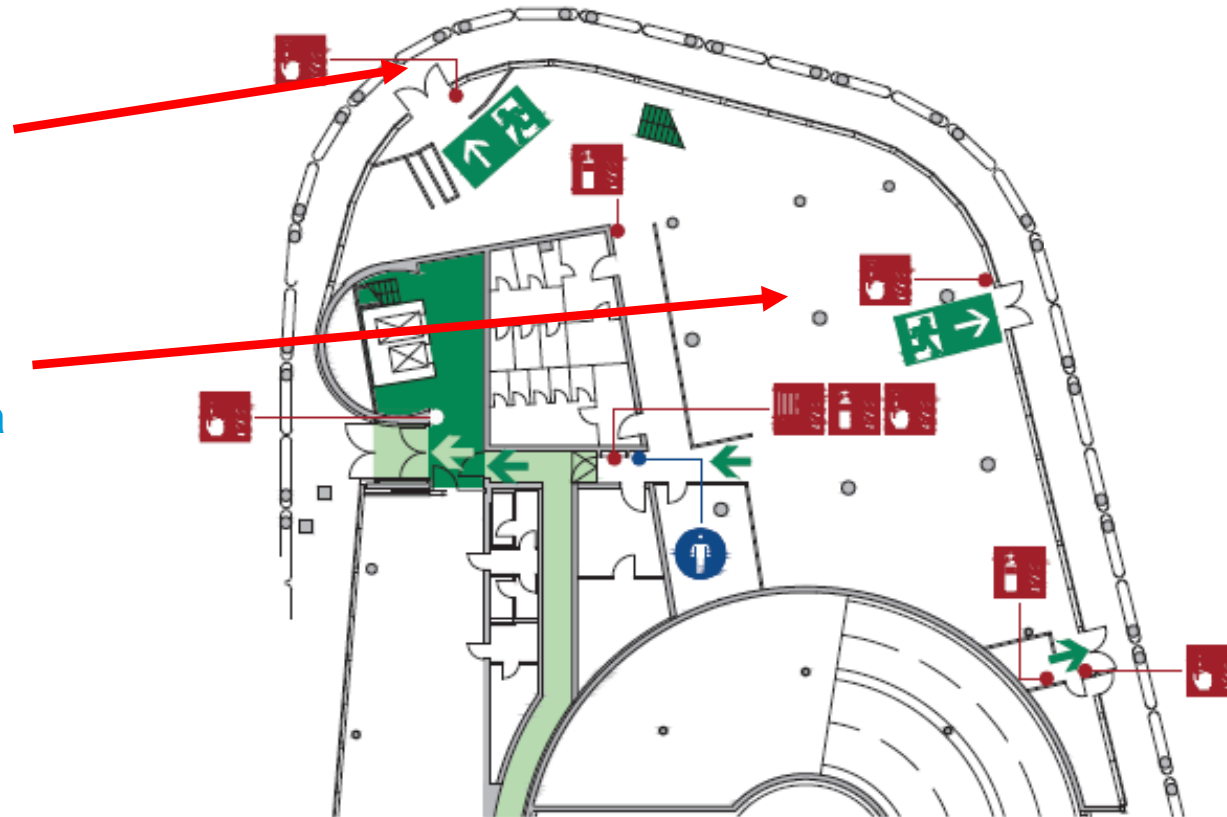
Material Meets Engineering 2023

15/06/2023

Safety Moment

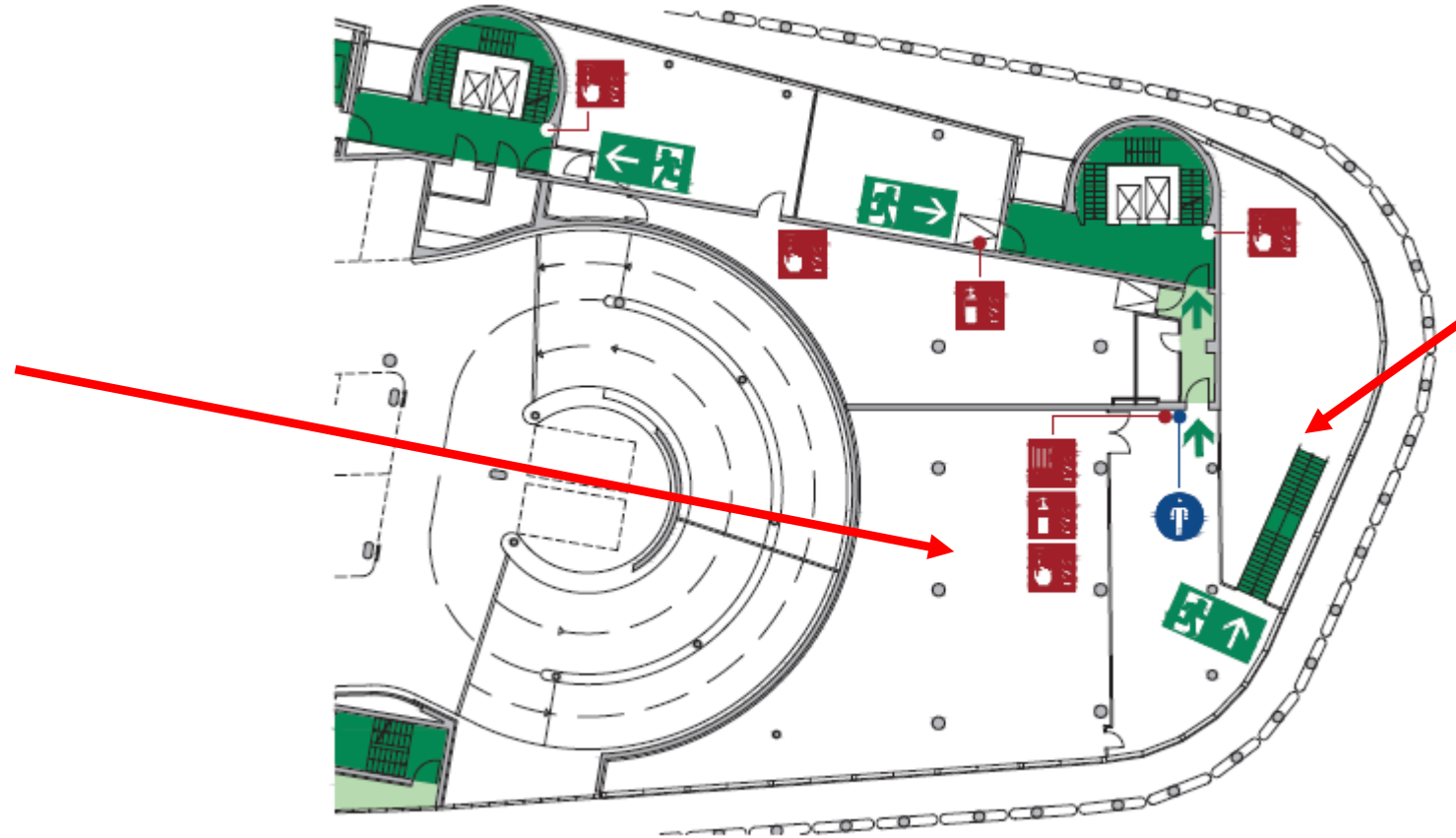
Ground Floor,
Main Entrance

Ground Floor,
Exhibition Area



Safety Moment

First Floor,
Meeting Area



Stairs from
Ground Floor



Solutions for a Better Tomorrow

ECO racing sponsoring initiative: Eco Marathon team – HELIXIA

Bruno Viala, LyondellBasell

Material Meets Engineering Conference, June 15, 2023

ECO-Racing sponsoring initiative

- How is this for Weekend Racing fun?



ECO-Racing sponsoring initiative

- Well... that's how



ECO-Racing sponsoring initiative

- **Eco-racing is a competition designed around energy efficiency**
 - Today our team uses SP95, or bio-methane in a custom ICE engine
 - Electric, hydrogen vehicles also participate in the competitions
- **Sustainable competition**
 - Prototypes go around professional circuits @ 25Kph mini, 50Kph max for safety reasons
 - The aim is to record the lowest possible energy consumption through a number of laps (20km equivalent)
- **Educational**
 - Teams are always linked to a school, driver is a student, part of the development has to be a school project
- **Established & media coverage**
 - Such competitions take place all over the world, and are well established, media covered



ECO-Racing sponsoring initiative

Team HELIXIA – association Défi Eco Synergie

- Independent, benevolent initiative
- Based in Berre, south of France
- Composed of
 - 2 active employees,
 - 1 retired colleague,
 - 1 non-LYB crew member
 - Students
- Established in 1997
- Meet the team on their stand today!

The team competed in 2 races in 2023:

* 9-11/05/2023 (Challenge Eco-green) * 20-25/05/2023 (Shell Eco-marathon)



ECO-Marathon sponsoring initiative

- **Potential 3D printed parts identified by the team**
 - Seat
 - Steering wheel
 - Accessories such as supports / holders that do not require a high mechanical resistance
 - Air intakes fitted on the bodywork
- **Steering wheel**
 - Is a restricted application in LyondellBasell
 - However, the accident risk is low (limited speed, short life expectancy)
 - Technically, 3D printing allows to create hollow shapes & heavy rib networks (ref support pads already produced) => We can make strong structures & shapes
 - Would be designed @ school
 - Provided as an STL file by the team
 - Tested & assessed before going into the car
 - Could be shown & showcased as a 3D printed product in *BEON 3D*
 - Similar to a games console product rather than automotive => definitely not production car feel



ECO-Marathon sponsoring initiative

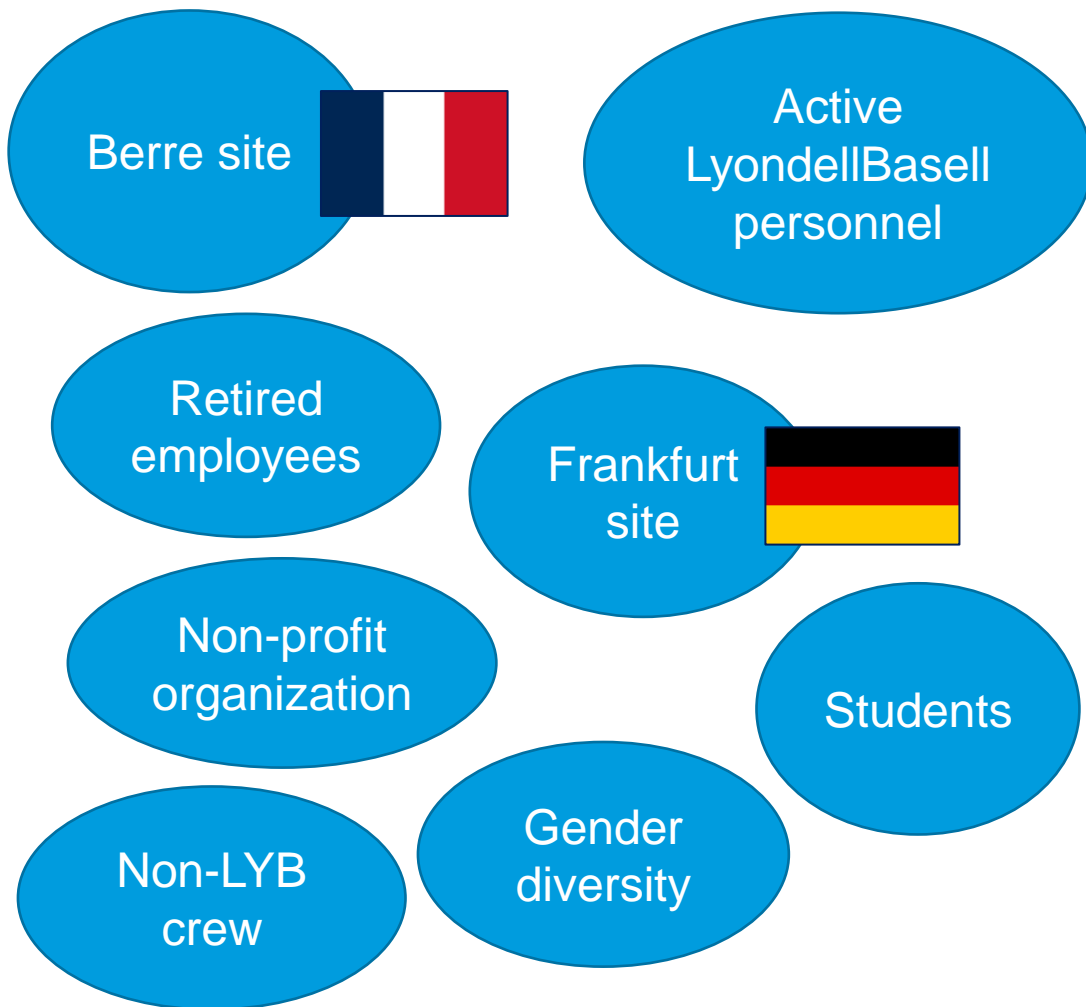
- APS Europe proposed to help out through cutting edge, modern technology
- 3D printed, custom designed air guides & air ducts
 - Engine cooling
 - Cabin cooling
 - Designed by the team @ partner school
 - Printed in Frankfurt LyondellBasell office



Beon3D
Beon3D@LyondellBasell.com



ECO-Racing sponsoring initiative



- 3rd place – Biomethane BioGNV category @Challenge ECOGREEN ENERGY Pays de la Loire – 431 Km



Together makes the team stronger!

ECO-Marathon sponsoring initiative

- Looking forward to the next steps of the journey!!!
 - Any ideas?
- A great thank you to the team
 - **Stephane CARNEVALE** – Team manager – Kraton conditioning expert - Berre
 - **Denis SILVY** – Mechanics – Kraton operation Coordinator – Berre
 - **Guy MARNAT (retired)** – Logistics
 - **Vincent MARNAT** – Logistics
 - .. And **Marjolaine CAHUZAC** – C-Unit manager, Berre Kraton
- 2023 Pilots
 - **Lucas GIMENEZ** (16)
 - Pilot n°1 à Nantes – Challenge Eco Energy du 9 au 11 mai
 - **Quentin PERISSE** (16)
 - Pilot n°1 à Nogaro – Shell Eco-Marathon du 20 au 25 mai
 - **Léa CARNEVALE** (15)
 - Pilot n°2 – both races





Solutions for a Better Tomorrow

Thank you !

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