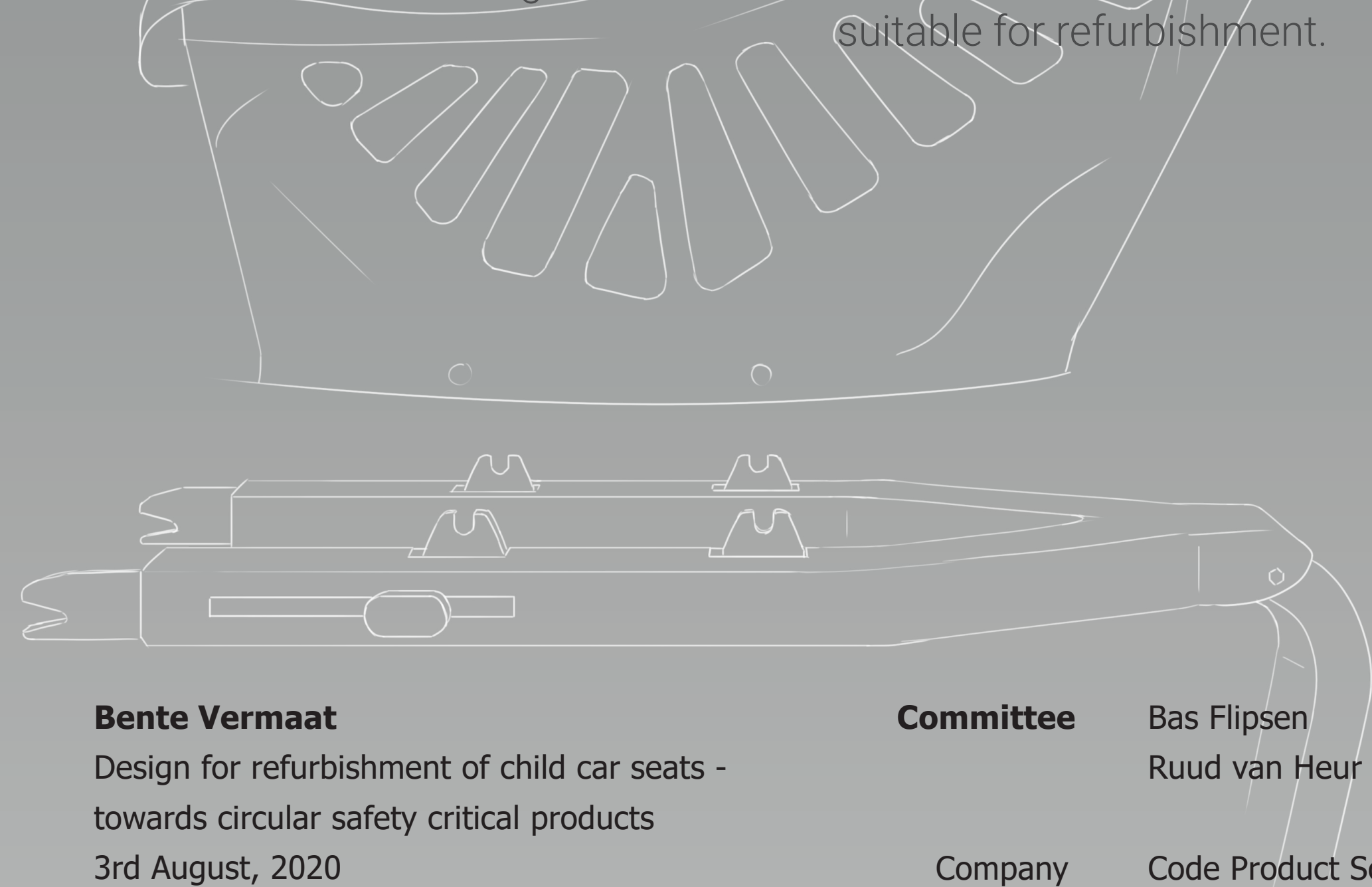
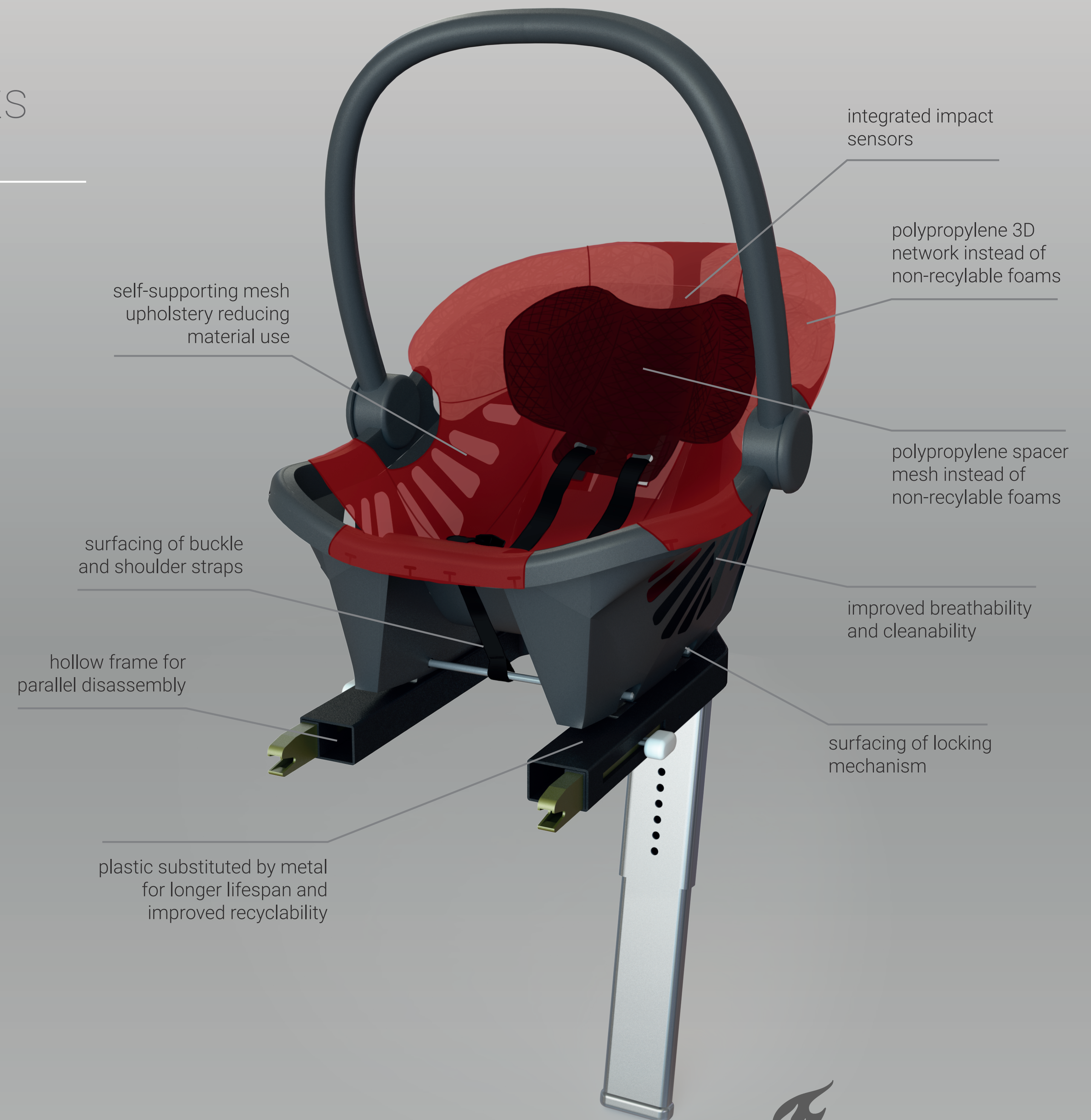


# Design for refurbishment of child car seats

## Towards circular safety critical products

This graduation project investigates the challenges of designing a safety critical consumer product suitable for the refurbishment loop of the circular economy through a case study on child car seats. Currently when child car seats are reused or resold on the second-hand market, their safety cannot be guaranteed as it is unknown whether the child car seat has previously been involved in a car accident. When child car seats are integrated in a refurbishment system, their safety can be guaranteed and thus their lifespan of safe use can be elongated.

Through an analysis of the current situation and by disassembling several baby car seats and ISOfix bases, a set of guidelines is established which can be used to design safety critical consumer products tailored to refurbishment. To illustrate these guidelines a redesign of a baby car seat and of an ISOfix base has been made. The ease of disassembly is improved by bringing priority parts to the surface of the product and by making the disassembly sequence more parallel. Furthermore, materials are substituted for alternatives better suitable for refurbishment.



**Bente Vermaat**

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towards circular safety critical products

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