

# [ROBOhouse: Empathic Home for People with Dementia]

## INTRODUCTION

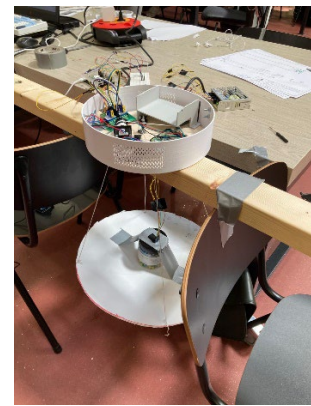
- [We are a multidisciplinary team of industrial design, mechanical engineering, and electrical engineering students working on the ROBOhouse project, which aims to create an empathic home that supports people with dementia. The project is a collaboration between designers, healthcare professionals, and dementia care experts. We worked closely with caregivers and people living with dementia to understand their needs and co-develop solutions.]
- [The main goal of the ROBOhouse project was to explore how smart home technology, robotics, and empathetic design could improve the lives of people with dementia. We were excited by the challenge of creating an environment that blends into daily life, offering support while preserving users' autonomy and dignity. This mattered to us because it gave us the opportunity to create meaningful, inclusive design that can truly make a difference.]

## JOURNEY & LEARNINGS

- [Our journey began with research into the daily experiences of people with dementia. In collaboration with the Driegasthuizengroep, we connected with a small group of people living with dementia. Through testing physical prototypes and observing real interactions, we learned how personal and varied their needs are. We also saw how the progression of dementia makes it increasingly difficult to learn new behaviors or interfaces. What felt logical and simple to us could be confusing or inaccessible to the user. This reminded us to question our assumptions constantly. Along the way, we had to pivot more than once – especially when early concepts turned out to be too complex or unfamiliar for our target group.]
- [One major insight that shifted our thinking was seeing how much users value familiarity. A concept requiring them to learn something new – even something basic – was often met with confusion or stress. This helped us realize that designing around existing habits and familiar forms was more impactful than introducing entirely new solutions. We also learned that collaboration and flexibility within our team were essential when we needed to shift direction quickly. These lessons will stay with us in future projects.]

## OUTCOME & IMPACT

- [Our project resulted in three main concepts and test models. The first was a system that helps people stand up from the user's current furniture, allowing them to keep their familiar home setup while gaining mobility support. The second was an unobtrusive hanging lamp that uses light and projection to gently guide the user through daily routines, such as remembering to eat. When not in use, it blends into the home without stigma. The third concept explored stimulating social behavior through interactive tools. Although early tests showed this concept did not meet users' needs, it sparked a new direction: using interactive art and intrigue to encourage physical movement. These ideas are grounded in empathy and real user feedback.]



- [The ripple effect of this project could be significant. By helping people with dementia stay at home longer, our concepts could reduce pressure on caregivers and care institutions, while improving the quality of life for individuals and families. Beyond dementia care, our design approach and prototypes could inspire broader applications in assistive technology and inclusive design.]
- [We are most proud of how we involved real users in our process, and how we stayed adaptable in response to their feedback. At the symposium, we're excited to show the progression from initial ideas to working test models – and how our final concepts reflect not only design thinking, but also genuine empathy.]

