



Home environment design to enhance the quality of living among older people

4 November 2015
Hong Kong

Joost van Hoof



Ageing in NL: policies and demographics

2.9 million 65+ (17.3 % of population): 720.000 80+

1 out of 5: retired

Ageing-in-place as the ideal

- In the own home, with little care support. Modified dwellings with technology or additional care support when needed.
- “It is important that older people start thinking about how they wish to live in time.”
- Residential care homes phased-out. New nursing home admissions: higher thresholds.

Role of municipalities

- Provision of advice and information. Helps to find adequate care support: day care, domestic support, caregiver support, sometimes home modifications

The Dutch ambitions: 'the 3 homes'



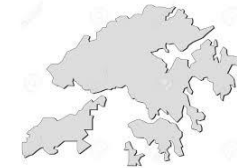
1. High-end rehabilitation: 'return home sooner'
2. Intensive nursing home care: 'like home'
3. Community care: 'continue living at home'

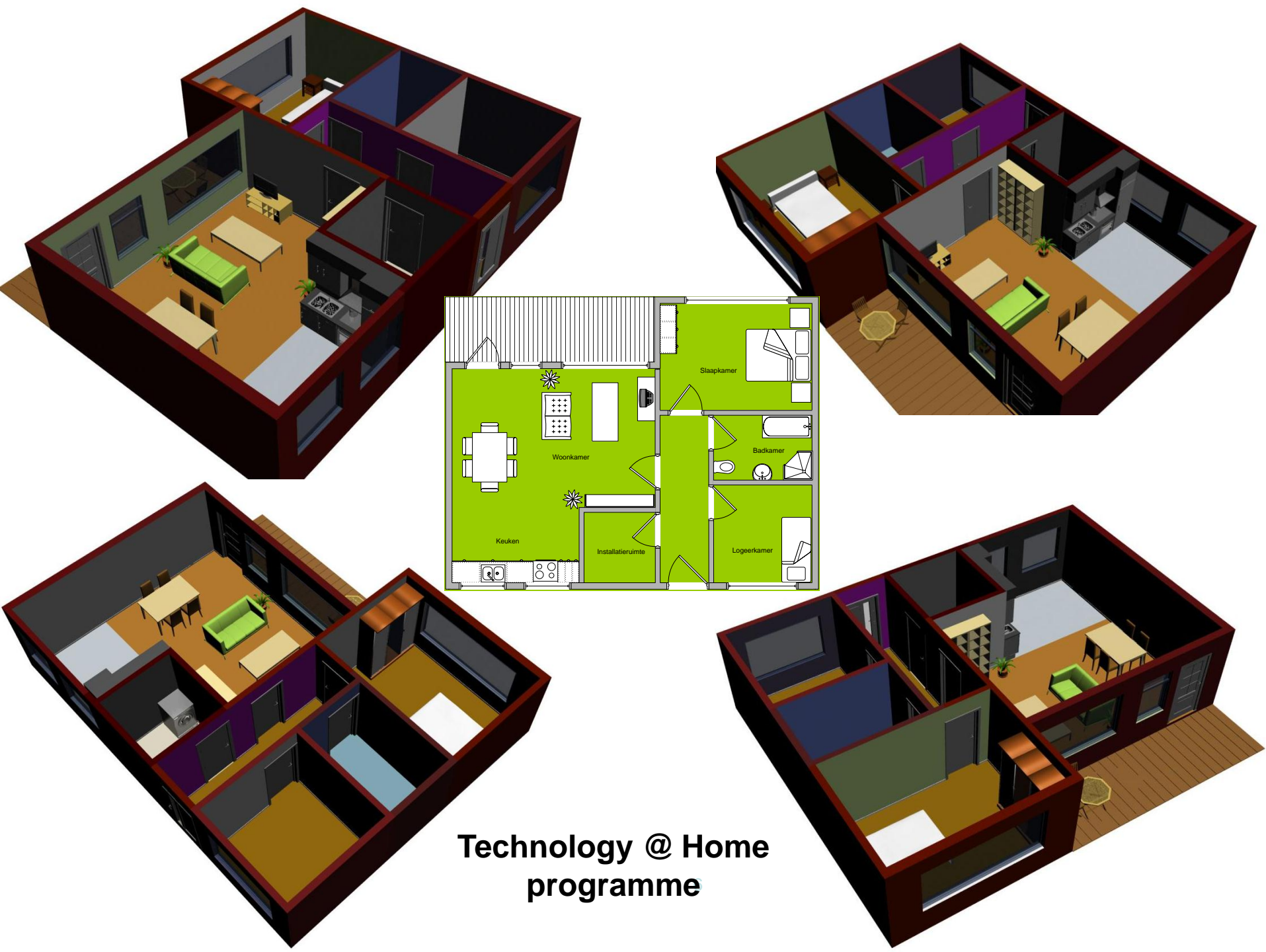
The challenges

- NL: yearly need for 44,000 senior-proof dwellings until 2021
- Current building regulations: older people with a physical impairment (mobility problems, stair elevators).
- Limited home ownership <50%
- Little systematic research done to verify if/how independence and well-being are supported by modifications
- Current design guidelines frequently based on practical experience only.
- Insufficient training and educational possibilities for architects, occupational therapist, social workers etc.
- How to age-in-place in times that the state is withdrawing?



Parallels between Hong Kong and The Netherlands: the need for educational programmes and training



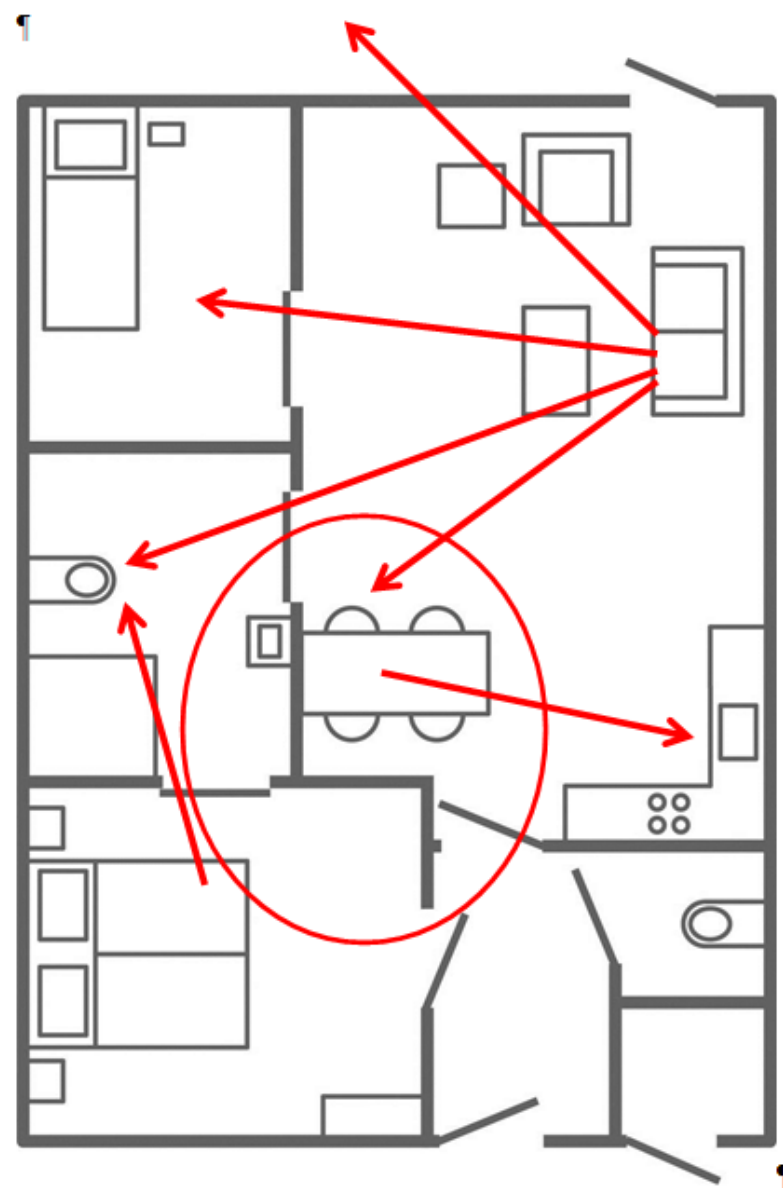


**Technology @ Home
programme**

Training, education and design

- Woerden, NL
- 60 m²
- 26 April 2012
- Environmental modifications
- Focus group sessions
- Design guidelines: safety, familiarity, etc

(van Hoof et al., 2013, Journal of Housing for the Elderly)



Evidence-based building design

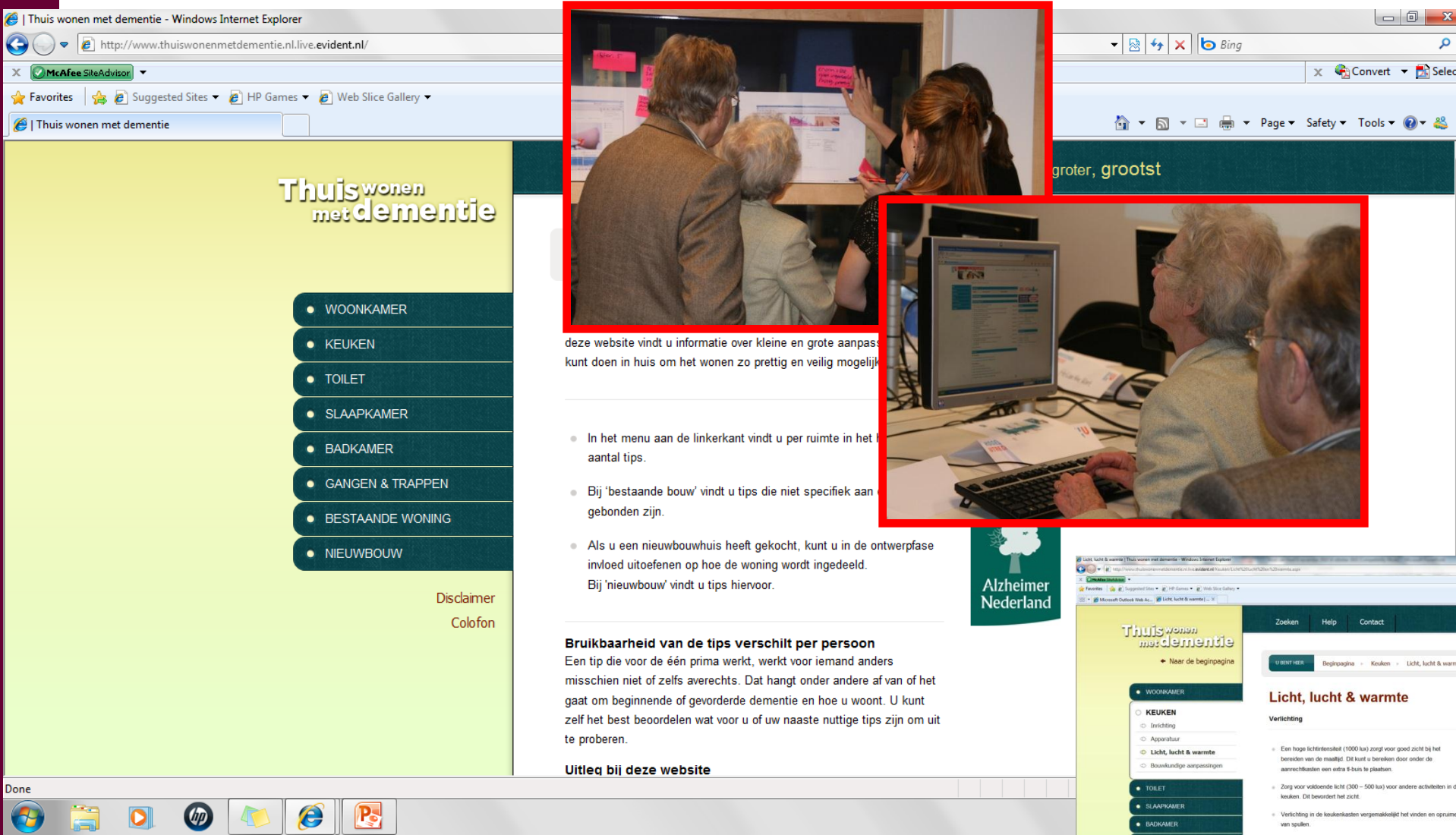
FONTYS EGT



www.thuiswonenmetdementie.nl

Public website for home modifications

source: Kort & van Hoof (2014) Technology and Disability



Thuiswonen met dementie

- WOONKAMER
- KEUKEN
- TOILET
- SLAAPKAMER
- BADKAMER
- GANGEN & TRAPPEN
- BESTAANDE WONING
- NIEUWBOUW



Disclaimer
Colofon

deze website vindt u informatie over kleine en grote aanpassingen die u kunt doen in huis om het wonen zo prettig en veilig mogelijk te maken.

- In het menu aan de linkerkant vindt u per ruimte in het huis een aantal tips.
- Bij 'bestaande bouw' vindt u tips die niet specifiek aan een persoon gebonden zijn.
- Als u een nieuwbouwhuis heeft gekocht, kunt u in de ontwerpfase invloed uitoefenen op hoe de woning wordt ingedeeld. Bij 'nieuwbouw' vindt u tips hiervoor.

Bruikbaarheid van de tips verschilt per persoon
Een tip die voor de één prima werkt, werkt voor iemand anders misschien niet of zelfs averechts. Dat hangt onder andere af van of het gaat om beginnende of gevorderde dementie en hoe u woont. U kunt zelf het best beoordelen wat voor u of uw naaste nuttige tips zijn om uit te proberen.

Uitleg bij deze website



Alzheimer Nederland

Thuiswonen met dementie

Woonkamer

- KEUKEN
 - o Inrichting
 - o Apparaatuur
 - o Licht, lucht & warmte
 - o Bouwkundige aanpassingen
- TOILET
- SLAAPKAMER
- BADKAMER

Zoeken Help Contact

U bent reis Begripagina Keuken Licht, lucht & warmte

Licht, lucht & warmte

Verlichting

- Een hoge lichtintensiteit (1000 lux) zorgt voor goed zicht bij het bereiden van de maaltijd. Dit kunt u bereiken door onder de aanrechtkasten een extra 8-buis te plaatsen.
- Zorg voor voldoende licht (300 - 500 lux) voor andere activiteiten in de keuken. Dit bevordert het zicht.
- Verlichting in de keukenkasten vergemakkelijkt het vinden en openen van spullen.

Does technology contribute to ageing-in-place?

Example: UAS-technology

- Project Unattended Autonomous Surveillance: sensor-based technology
- Pilot with 18 older people: nursing home care at home

Goal of system:

- ageing-in-place, delay of institutional care

By:

- increasing sense of safety and security
- support of formal/informal carers

Research questions:

Does the system work?

What do clients need and expect?



Main outcomes

- Increase of quality of care through use of technology.
- The provision of care is more than the implementation of care technology.
- Technology alone offers no solution.
- Home modifications are much needed, such as stair elevators and communication technologies.
- Implications for management
- Question: So how can technology help?

van Hoof et al. (2011) International Journal of Medical Informatics

Use and acceptance of technology in NL

Use by people aged 60+ (in %)

Browsing the Internet for health-related information	33
Wheeled walkers	10
Wrist- or neck-worn emergency response systems	6
Stair elevator	4
Vacuum robot	4
Support stockings (oedema) machine	3
Monitoring of activities/daily patterns	3
Keeping appointments with GP via the Internet	2
Video communication with GP	2

(NIVEL Consumentenpanel, 2014, n = 319-328)

Current literature: acceptance

- 2014: Limited number of studies (16) on technology acceptance
- Most about technology to support safety/security or social interaction
- Mostly pre-implementation, too few post-implementation studies

Pre-implementation attitudes:

- Many concrete disadvantages (false alarms, burden on children, etc)
- Advantages are more abstract (independence, safety)
- General attitude: “very nice, but not suitable for me”
- Wanting to be independent ≠ acceptance

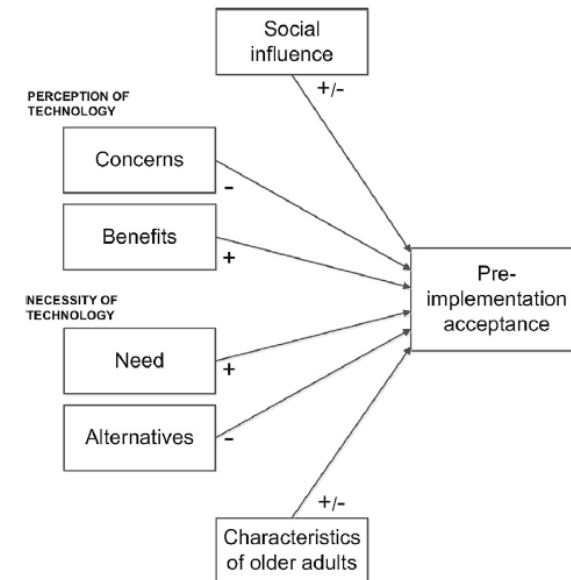


Fig. 2 – Model of pre-implementation acceptance.

(Peek et al, 2014, International Journal of Medical Informatics)

Longitudinal field study



Independence and technology

- 1) Being able to care of yourself, not being dependent on others;
- 2) The freedom to do what you want to do;
- 3) Don't feel burdened / obliged towards others;

Nr. 1: what older adults want and what is promised by suppliers

Nr. 2: related to control (over/by technology)

Nr. 3: related to relationships with others (asking for help, being a burden to others)

(Sixsmith, 1991)

(Peek et al., 2015, Gerontology)

Like home



„Heaven and haven“



Psychological (4)

1. Sense of acknowledgement

2. Preservation of own identity

3. Autonomy & control

4. Coping

Social (7)

5. Interaction with staff

6. Interaction with residents

7. Interaction with family & friends

8. Interaction with others (general)

9. Interaction with pets / dolls

10. Reciprocity (in care relations)

11. Activities

The built environment (8)

12. Layout: private space

13. Layout: (quasi)-public space

14. Personal belongings

15. Automation & communication

16. Look and feel

17. Outdoors

Structured review of the sense of home

Potential for architectural solutions



Examples of interior design inside Dutch nursing homes

Making moodboards with residents with dementia



Home improvement with people with dementia residing in nursing homes



Design research: We should involve older people



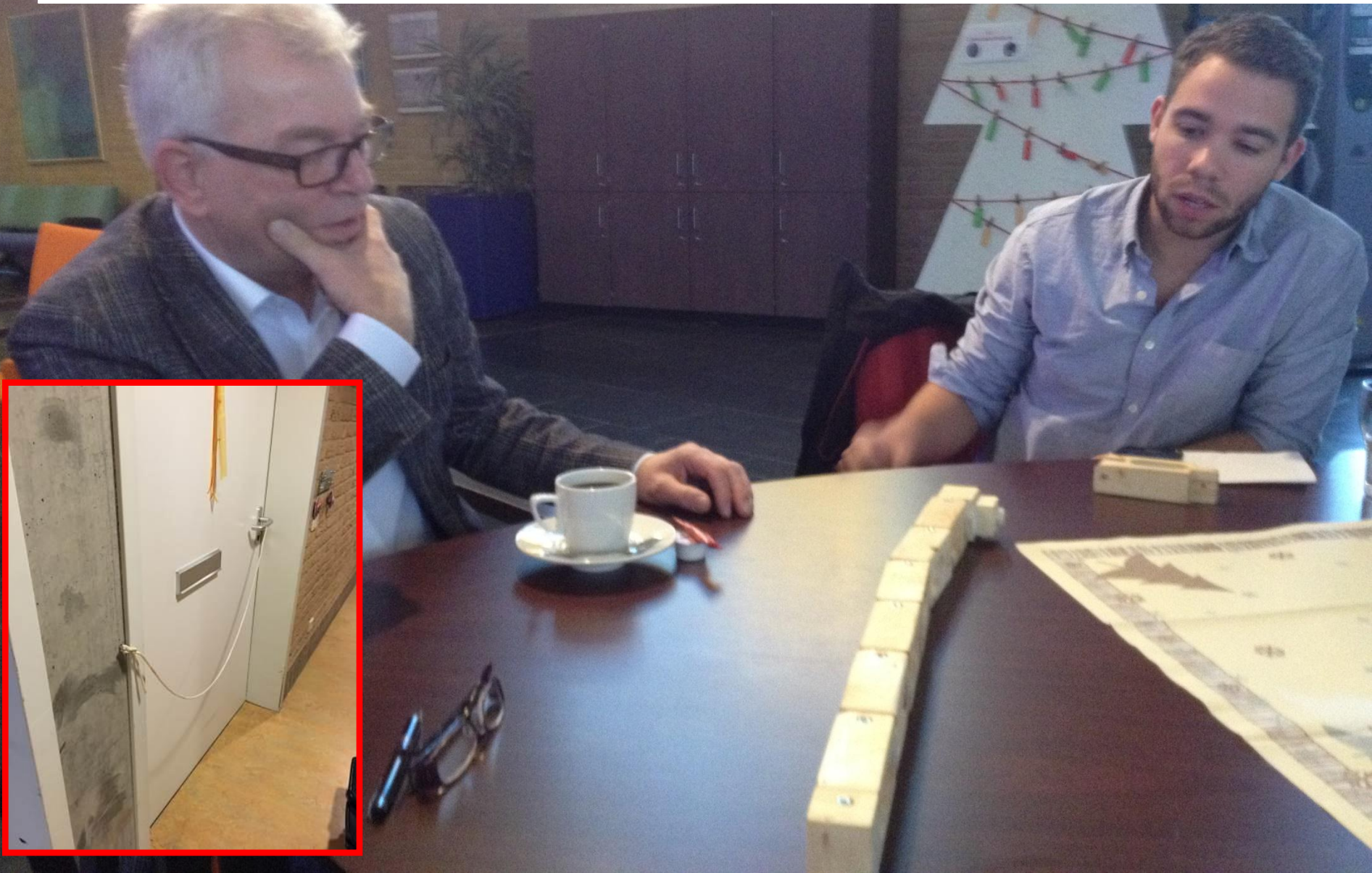
Seniors in class

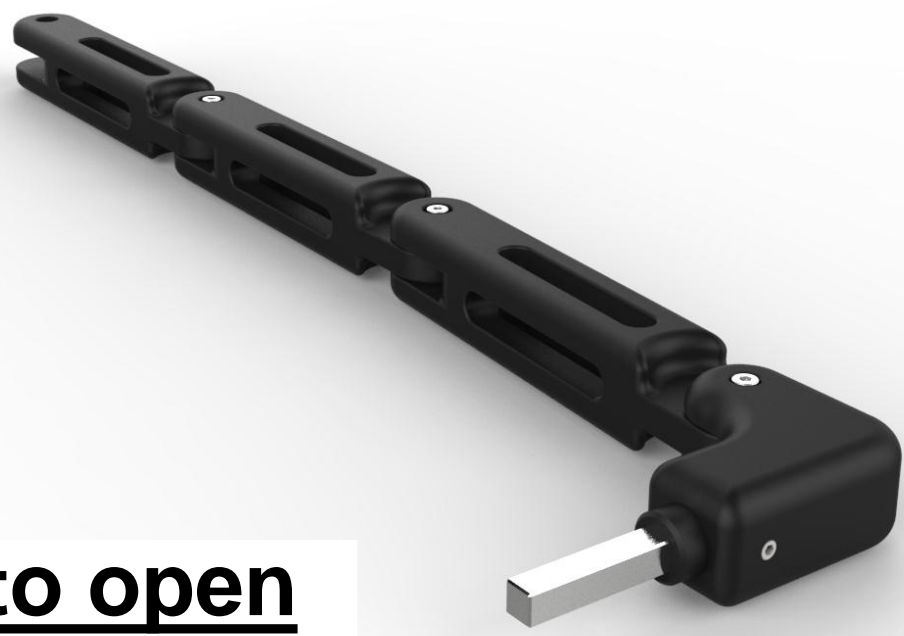


Interaction older people and students: in our Nursing Home Living Labs



Cocreation and codesign Low-tech solutions for accessibility

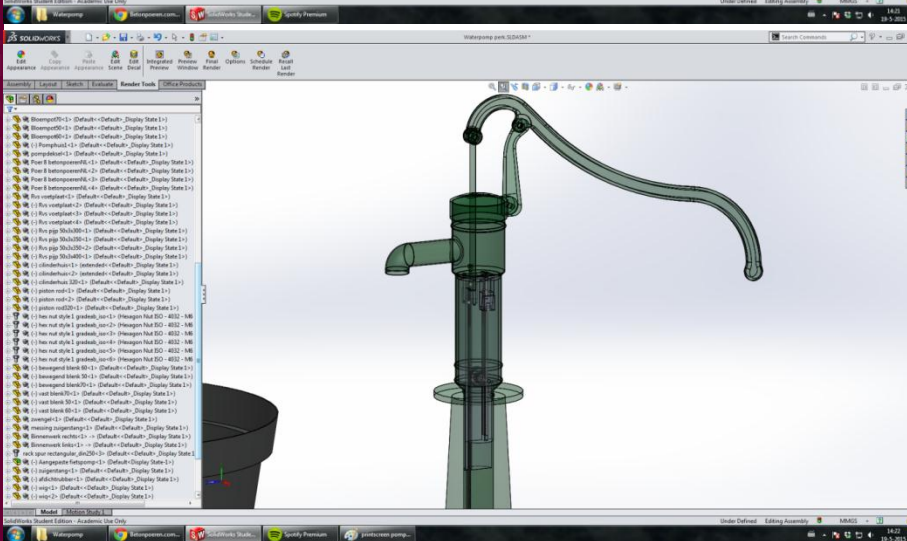
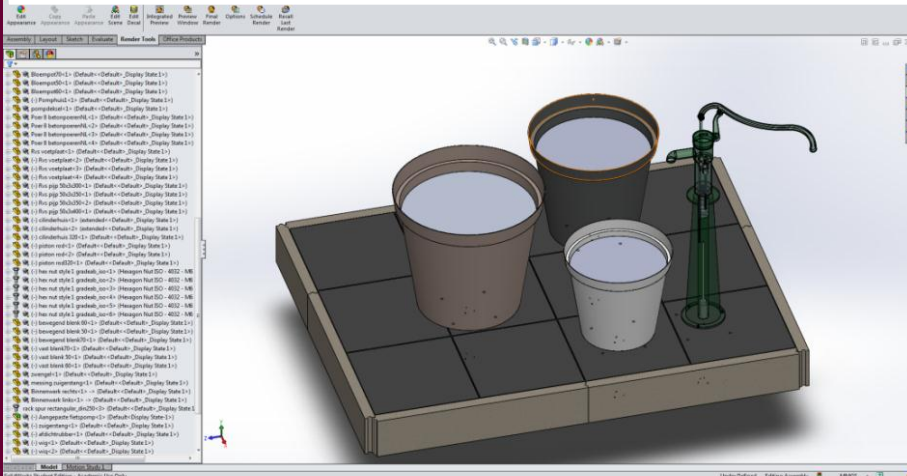




New ways to open
doors



Interactive water pump



FONTYS EGT





Joost.vanhoof@fontys.nl