![waag society logo] **waag society**
institute for art, science and technology

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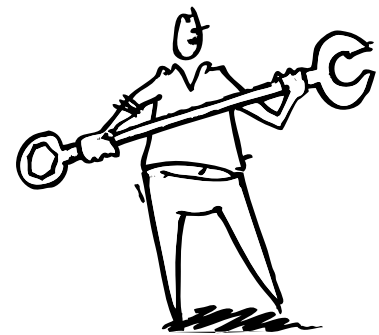
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Waag Society, institute for art, science & technology develops creative technology for social innovation. The foundation researches, develops concepts, pilots and prototypes and acts as an intermediate between the arts, science and the media. Waag Society cooperates with cultural, public and private parties.

creative care lab
waag society

Real needs for real people

With 'real needs for real people' as its slogan, Waag Society's Creative Care Lab gives direction and meaning to technological development and innovation in care. Creative Care Lab provides a unique context for revealing innovative research. Together with users, researchers, soft- and hardware developers, health care professionals, designers and artists we develop new technological applications, innovative concepts and prototypes, services and processes for the various stakeholders in the health care-sector.

The activities of the Creative Care Lab lead to prototypes for innovative products and services that contribute to the quality of life. According to the 'Users as Designers' method, users – from caregivers to receivers – are involved from the start in the design process.
The Creative Care Lab develops projects around the following central themes:

Aging Well
The aging society needs innovations that support the social, physical and mental wellbeing of elderly people. Together with focus groups the Creative Care Lab develops applications that enable elderly to live independently as long as possible, improve the quality of life and prevent social isolation.

Connectedness
Social interaction is at the heart of care and wellbeing. The experience of being connected plays an essential role in staying healthy. Connections exist both in daily life as well as online. If these connections are absent, various physical, psychological and behavioural problems can occur.

Games for Health
When it comes to prevention and the monitoring and managing of (chronic) diseases, the improvement of independence is a good starting point for innovation. After all, patients know their own bodies and needs best. Vulnerable groups such as the chronically ill or people with a limitation (both young and old) benefit from playful, interactive solutions that provide support in their daily lives and that emphasize what they can do instead of what they cannot do.

The Creative Care Lab has extensive experience with user-centered-research. Unlike other knowledge institutes that work within the field of IT and health care, the Creative Care Lab not only focuses on conducting research but also on developing concepts and prototypes (learning by doing) for applicable solutions. By doing so we bridge the gap between the health care sector, the creative industry, businesses and research-institutes.

Contact
For more information about our workshops, research and projects please contact Sabine Wildevuur, head of Creative Care Lab (sabine@waag.org) or Sacha van Tongeren, project developer (sacha@waag.org).

For an overview of our current projects, see page 4 and 5, or visit: waag.org/creativecarelab

"The existing care system is unsustainable"

INTERVIEW WITH SABINE WILDEVUUR

Sabine Wildevuur, head of the Creative Care Lab at Waag Society, talks about real needs for real people, creative care, and innovation in The Netherlands.

What motivates you to get started at work every day?
"I get a lot of energy from bringing together the different domains involved in health care. This sector has traditionally worked from separate disciplines, such as medicine or technology, and as a result the human factor is forgotten. So we seek to combine technology, science and art. We involve people from all kinds of backgrounds in our projects; researchers, patients, physicians, medical specialists, artists, council officials, nurses, home carers, volunteers and business investors. These multidisciplinary teams often come up with really innovative ideas. I love being a bridge-builder."

The Creative Care Lab works with the 'Users as Designers' method, which puts users at the heart of the process. What is the specific value of this approach?
"Sometimes you're developing a concept for rather stereotyped groups, ones you think you know well. But when you really start talking with them, their reactions are different from what you expect. It's very important to keep asking questions until you know what people really need, before you start looking for solutions. The results are then much more likely to answer to our main focus: 'real needs for real people'."

Could you give us an example?
"A good example would be BodyGuard, the biofeedback system for people with autism. We were working together with the Dr. Leo Kannerhuis, an autism expertise centre. They put us in touch with people with a disorder in the autism spectrum, who gave us input for the application we were developing. We finally came up with a 'pebble' that measures a person's stress level: if it gets too high the pebble turns red, a signal to calm down. The nicest compliment I got was that people who carried the pebble with them felt calmer right away; a sort of placebo effect."

What kind of questions do people bring to the Creative Care Lab?
"We get questions from research institutes, foundations, health centres, expertise centres, but also from start-up businesses. They seek help with user research, or with developing a concept or prototype. But marketing a prototype is important, too. We've noticed a growing demand for knowledge in this area, as well as for new business models."

Have you detected any other trends in this sector?
"Everyone understands that the existing care system is unsustainable; the innovative application of technology might well provide certain answers. However, the thing to remember is that technology cannot replace human involvement, but acts as a support."

How is the Creative Care Lab integrating technology into health care?
"Above all by showing the people who are involved what the possibilities are. For instance in our Health-Lab, a user test environment in Amsterdam. We are collaborating with a number of other parties to set up an ICT & Care platform in the region of Amsterdam, and we're now looking at how the subject of ICT & Care could be included in training programmes for future nurses and other care workers as well. Within the European Ambient Assisted Living Project called Express to Connect, we are also sharing our knowledge at an international level. Together with an international consortium we develop the tablet game app 'Play with your life', which promotes social interaction between older people. This is another multidisciplinary team, which has led to great new insights. And within this group, we are looking at new business models. So we are constantly developing and working on new projects to innovate health care locally, nationally and internationally."

"Technology cannot replace human involvement"

Current Creative Care Lab projects

Health-Lab

Care & ICT

Health-Lab, a program in the metropolitan region Amsterdam, has the ambition to create and stimulate solutions for the care of tomorrow. This program focuses on increasing the efficiency in care as well as on allowing people to be independent longer. This should be done with the help of technology, but not solely with technology. Health-Lab has set up several 'Living Labs' locations where real users test applications in their daily life and help designers and developers to improve their products. Health-Lab is an initiative of: Amsterdam Innovatie Motor (AIM), The University of Amsterdam (UvA), VU University Amsterdam, University of Applied Sciences Amsterdam (HVA), INHolland, Sigra, AMSTA, Waag Society and the municipalities of Amsterdam and Almere. The province of Noord-Holland and the Ministry of Economic Affairs support Health-Lab.

www.health-lab.nl

BodyGuard

A stress meter with telemonitoring as a self-management tool for people with autism

Together with the Dr. Leo Kannerhuis, centre for autism, we are developing a biofeedback system to support people with Autism Spectrum Disorders (ASDs) during stressful situations at work. By using sensor technology, a person will be alerted when stress levels become too high. An integrated system with a Digital Coach gives practical advice so the user can adequately deal with the situation.
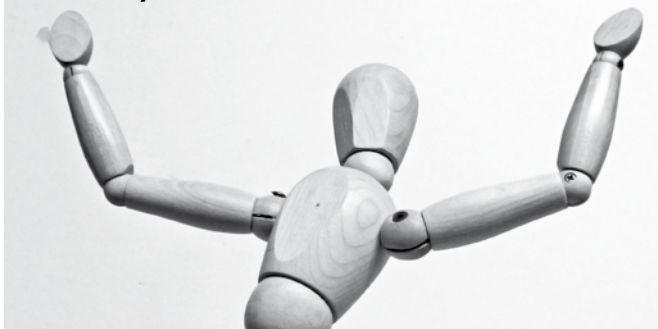
waag.org/bodyguard

COMMIT

A public-private research community solving great challenges in information and communication science, shaping tomorrow's society

COMMIT unites academic research and (non-)profit organizations in ICT. It is a use-inspired fundamental ICT-research in well-being and well-working; in public safety, science, information services, and with applications in culture, agriculture and health care. Creative Care Lab is involved in the development of tangible interface technologies to register and elicit emotion and to stimulate physical (i.e. exercise and coaching) and emotional wellbeing (i.e. affective communications), and to develop the base for trusted health care services.

www.commit-nl.nl

Physical and Mental Wellbeing in our hybrid world

Highlighted project

Express to Connect

Photo game as a part of 'Play with your life' on an iPad tablet

Waag Society is part of a European consortium that is developing an innovative solution for the growing population of elderly people aged 65+. The Express to Connect (E2C) project addresses the overall European challenge of preventing loneliness and isolation amongst elderly. It is estimated that by 2050, the number of people over 80 will have doubled in Europe. The oldest part of the population is at particular risk of becoming isolated and lonely as they grow older and their work-related networks erode.

The overall objective for the Express to Connect consortium is to develop, test and deploy a web service, which stimulates and facilitates personal storytelling. The Express to Connect proposal addresses the overall European challenge of preventing loneliness and isolation amongst elderly people. In order to understand the challenges of aging within a European context, regular workshops and co-creation sessions are organized. Ranging from stakeholder workshops with participants selected in the four participating countries (Denmark, Finland, Sweden and the Netherlands), using e.g. toy blocks as a means of supporting the process, to innovation workshops in which different concepts are evaluated.

Through this process we invite senior citizens to share with us some of their personal experiences and perspectives on questions like:
• What spoils or challenges social relations in your life?
• What do you do to maintain and create social relations?
• What are the barriers to escape loneliness, when it is there?

We aim to create a shared language between the consortium partners too.

A range of activities has been deployed within the project from the beginning of the project in april 2010. As a result Waag Society is prototyping 'Play with your life', an iPad game in which seniors and their (grand)children can enjoy a storytelling game together using their personal photographs and musical taste. The prototype is to be formally tested in 2012 in Denmark, Finland, Sweden and The Netherlands and will be available through the App Store for larger scale use later in the year.

E2C is funded by the European Ambient Assisted Living Joint Programme. Waag Society is collaborating with Copenhagen Living Lab, Substanz, Heutink, Verhalentafel BV, Halmstad University, Halmstad municipality, Forum Virium Helsinki and Laurea University of Applied Sciences.

www.express2connect.org

About the authors
Matthias Hollwich and Matthew Hoffman are maverick architects who believe that today is a historic moment in architecture. With a society growing older (which is a beautiful thing – who does not want to live longer?) and baby boomers aging, they take the opportunity to put architecture back into the driving seat for social purposes. Not purely functional, but with the infusion of progressive new organizations, and the development of spectacular new forms and architectural language. It is the moment where architecture can support a revolution in society. Hollwich and Hoffman propose their design of BOOM Palm Springs as a model for the development of dynamic communities that support an aging population.

BOOM Palm Springs (images courtesy BOOM Architects)

A new age for pioneers
Who wants to live in a nursing home?

CO-WRITTEN BY MATTHIAS HOLLWICH AND MATTHEW HOFFMAN

One third of the Americans spend their last 850 days in the most socialized environment there is – the nursing home. This is surprising for a country that has fought socialism the hardest. This sort of communal living is a foreign and unwanted concept for a generation that was raised in the post-war explosion of the suburbs, along with their separate plots of land and clearly demarcated boundaries between private and public. Why are decorated hospitals where people live their last days in bedrooms with 2 to 4 other people who they've never met, the only choice for the final moment in life? With medical curtains now translucently marking the boundary between their own space and everyone else's.

There are two statements we can make: first, a nursing home will and can never be a home (so why try – let's do something else with it) and second, moving into a nursing home can very often be avoided – but how?

BOOM Palm Springs – The Prototype
Two years ago BOOM Architects began prototyping a new age-related Lesbian-Gay-Bi-Transgender (LGBT) community in the California Desert near Palm Springs, on a virgin plot of sand; a perfectly square tabula rasa. We invited nine other architects to design this community with us: as physical manifestations of their own beliefs on aging, lifestyle and architecture.

There were two catalysts that defined the beginning of the project and guided our work: firstly we had to radically re-envision the way we ourselves want to be living at a later age. Secondly we came to define the LGBT community as 'mavericks'. Many have prototyped their own lives since they could not follow the typical model that society offers. Putting the two together we found the perfect match between need and opportunity – reinventing aging with a community that had to invent itself. The gay community will not be satisfied with the traditional design of say, the typical desert golf complex. This community has pioneered different ways of living together in their youth, and they are determined to live only in a community whose design was in sync with a sophisticated, active lifestyle. The design and development team would have to foster the idea that residents would choose to transition to their more mature years in the same community.

We have been addressing how to actually define 'community' throughout the whole design process of BOOM. We soon discovered that any new community focused on 'new aging' needs to be multi-generational as well. Older residents want to live near their more youthful counterparts. So, rather than focusing on residents exclusively in the 55+ age bracket, BOOM's scope is extended to appeal to residents of all ages, including children, since many younger members

now have families. Moreover, the community would not be exclusively gay, but rather a society that is diverse and open to all.

In this way, BOOM imaginatively embraces the philosophy of 'aging in place', where the focus is on a rich and active life rather than on retirement and withdrawal. The natural liveliness that comes from a multi-generational community extends to an attitude of caring for all. Historically, the gay community has been on the forefront of helping each other in difficult times, and this will continue at BOOM. Thus, security is not just promised by having state-of-the-art wellness facilities but by residents knowing they are residing in an active community of caring.

Three core values unfolded over time
We – as architects - have to allow for the creation of meaningful life. There cannot be anything artificial in the community and people need to be able to express themselves, realize their wants and desires, and embedding themselves into a social engine. To do so, we envisioned an architecture that provides everything that the inhabitants need.

The second core value is high style. We accomplish this through extraordinary architecture with state-of-the-art amenities and exceptional experiences. Today most architecture for the so-called 'elderly' looks dated, institutional and depressing. Focusing on high-style inverts the perception of aging, making BOOM desirable and shifting public perception to envy the people living there. With that we create an architecture that works with us on fighting age discrimination.
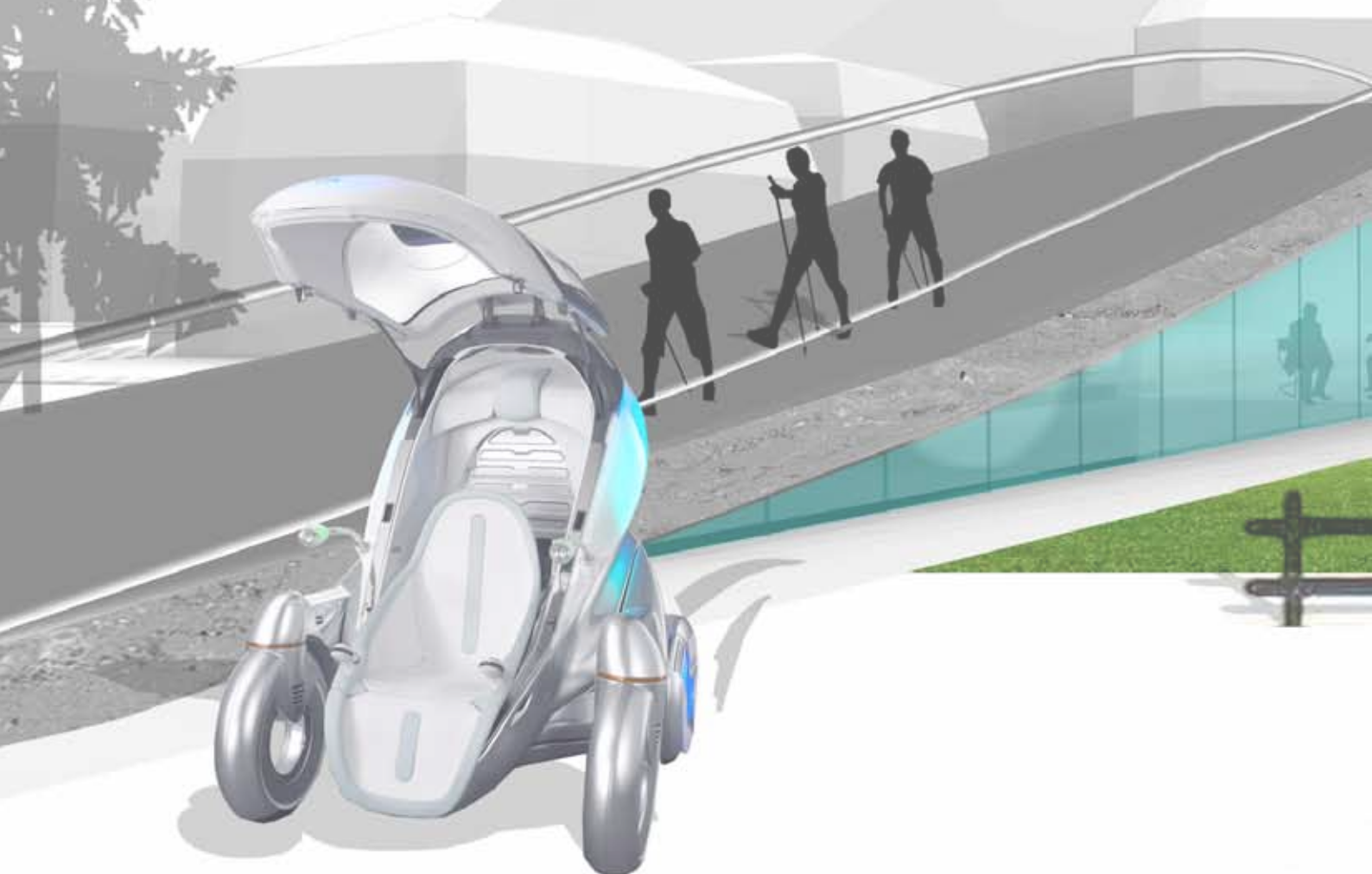
Third it is about a secure future. At BOOM we eliminate all insecurities possible. Starting with methods of non discrimination, which includes age and sexual orientation (in the LGBT community many people go back into the closet once they start depending on help – to avoid abuse) the provision on health and age care when needed deeply embedded within the architecture and programming. In fact, the 'nursing home' which in our case is a wellness hub, presents itself as the most exotic and futuristic building of the community.

The future BOOM architecture empowers through a variety of designs, supporting

respectful socializing, a variety of programming and stunning architecture. While the ten micro-communities are unique to each designer's sensibility, the core values of BOOM are manifested through unique gradients between public and private life. Each housing design is intricately interfaced with varying degrees of public spaces. From the interiors of each home, and each room within the home, residents can move directly to and from the larger communal spaces. This creates a sequence of zones that goes from public to private and invites the community to live with each other as they please.

Learning from BOOM Palm Springs – BOOM Around the World
The response to BOOM Palm Springs has been so enthusiastic that we are considering a 'BOOM Community Model', a blue-print for other BOOM locations. Part of this expanded direction of the project is a reaction to the real estate crash of 2008, which has left a swath of vacant properties of all shapes and sizes across the US. Adapting BOOM values makes us ask "How do we create a viable community in a vacant strip mall north of Miami, Florida?" or "How do we
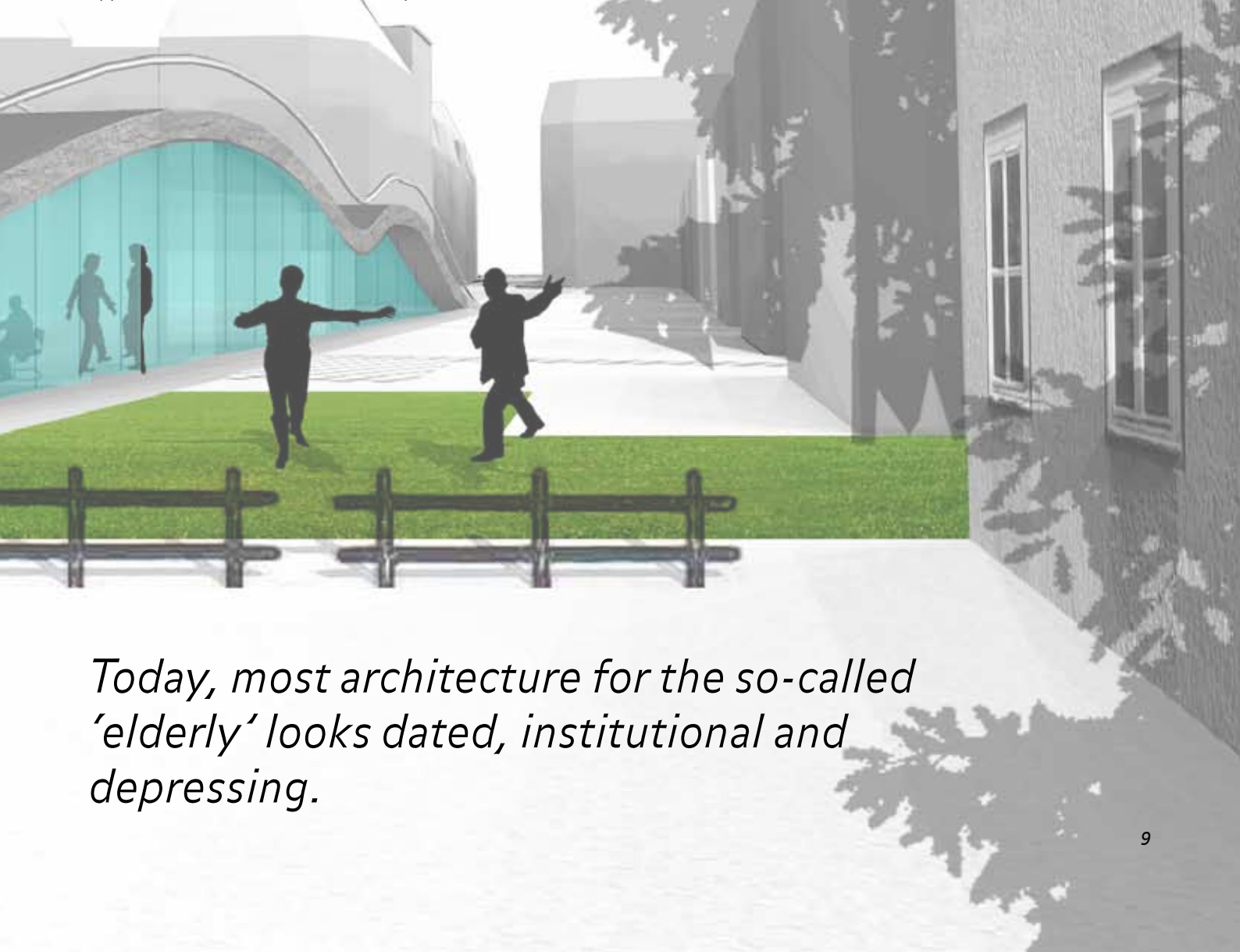
create a retirement village in an empty mid-rise in Vegas?"

To realize the BOOM model, we are inventing new techniques, as social condensers, which examine the hidden potential of existing typologies, by inserting catalysts for community formation. This in turn enables each of us to redefine our own futures. We are social creatures, and in order to allow ourselves to actively define our own lives we must create and re-create dynamic environments in direct relation to our own needs within a larger (continuously changing) social network.

One of our new prototypes for BOOM is using a very simple programmatic move to change everything that typical residential developments are about. We want to turn the residential high-rise building upside down. Move all public programs into the skies. What effect does that have? It empowers the community, and gives the collective of the residences the most valuable space of the building for communal purposes. A simple move, which causes long lasting changes and amazing architectural opportunities. Where in the end the top

of the buildings is not just decoration, but where it becomes a social mission to be playful and innovative spatially.

For more information, check out: www.hwkn.com

Today, most architecture for the so-called 'elderly' looks dated, institutional and depressing.

Design for increased awareness
How architecture helps us to stay connected

BY CARO VAN DIJK

Caro van Dijk (Architectenbureau Paul de Ruiter, TU Delft) states that many of the emotional problems people experience in aging revolve around not being able to trust your own sources of information anymore: your senses. In this article she elaborates on this subject. At the same time she explains how architecture can help whilst dealing with these issues, by focusing on the living environment as an invisible assistant.

About the author
Caro van Dijk graduated in 2005 at the Architecture department of the TU Delft with a design for a sustainable psychogeriatric home and a sauna. Designing for elderly people and sustainability have had her particular attention ever since. Having worked at several leading offices in Amsterdam, today she has a broad experience as an architect. At Architectenbureau Paul de Ruiter she is now working on a sustainable luxury hotel, social housing for elderly people and several new sustainable care and housing concepts. Besides working in the building practice, Caro is a design teacher at the TU Delft and a frequent lecturer on sustainable architecture for various educational institutions. She initiated several events to share and generate knowledge in her field, such as documentary nights and interdisciplinary workshops.

One of the most remarkable changes of getting older, that happens to everyone in some way or another, is the change of our senses. Our senses provide us with the right information to respond to our environment. They are a prerequisite for how we make decisions about what to do or where to go. Our senses are thus a requirement for our autonomy in life. People who feel their senses changing as they get older, start living differently – their field of perception is smaller, it causes insecurity, they move around more carefully, feeling the ground with their feet and seeking for support. Quick instinctive response becomes more difficult as it gets harder to immediately judge the situation. The mind may still be sharp as a knife, if it doesn't get the right input, it cannot make out what is going on. Or how to respond.
However, in the design of buildings there is so much we can do to support the senses, in a non-medical, non-stigmatising and non-present kind of way. A space can be designed so that it helps the senses, visibly or acoustically for example. Just by careful planning and the right usage of light and materials. This means that a difference can be made without using the stigmatised label of 'senior apartment' or 'elderly home'. For the inhabitant, it means comfort, security and autonomy. Your house can be your invisible assistant.

Senses and Design
Older people need much more daylight to perceive things correctly than younger people. The intensity of the light on a table surface should be much higher for them to be able to read or to do precision work. Colour contrasts help to distinguish one object from the other – useful for items in a walkway. On the other hand, an abundance of light can easily cause glare, which is more difficult to deal with for older eyes. So the light should come from different directions, evenly distributed throughout the space, and looking directly into the light source should be impossible.
All this goes for both natural light and artificial light, but natural light has the added value that it is beneficial for people's biorhythms and that it provides orientation. The colour and angle of natural light informs us directly about the hour of the day, the season and the weather – information stored firmly in our instincts. So natural light provides us with orientation in time as well. This information is directly connected to our neural and hormonal system, and helps people with dementia to avoid depression or insomnia.

Next to sight, smell and taste are important factors to take into account. Natural air has to some extent the same value as natural light; the smell and humidity of it tell us immediately what kind of weather it is in what season. 'Artificial air' – air that is treated and centrally distributed through ventilation ducts – very often contains dirt and dust and lacks the right humidity and 'freshness' of natural air, which irritates the nostrils and throat. Furthermore, natural air that is brought into the room

directly, for instance through the façade, is experienced as healthier: there is a strong psychological aspect in being able to open the window that makes people feel comfortable. Natural air connects us through our noses with our surroundings in a very basic way – weather, temperature, vegetation, location – and roots the building and its inhabitants in its place.

The third sense is of course hearing. For older ears it becomes increasingly difficult to hear the higher frequencies in the audible sound spectrum. This means that music and other people's voices, especially children's, are hardly perceived, whereas traffic noise or mechanical noise is better audible: the opposite of what is desirable. Hearing devices have to rearrange this, but is there any chance of us fixing this in the building design as well?

When it comes to designing for acoustic quality, I can refer to the beautiful little pavilion that Zaha Hadid designed for the Holland Festival a few years ago. This pavilion was nothing more than a spiralling steel skeleton covered with fabric, placed in the Gashouder hall in Amsterdam. It was designed especially to play Bach sonatas from 'Das Wohltemperierte Klavier' on a piano forte: the sound was crisp and crystal clear and had little delay in order to make the famous counterpoints in the composition stand out exactly as they should. Now if a simple steel skeleton and some fabric can do all this, then it is certainly possible to design home interiors so that their elderly inhabitants can hear their grandchildren talk.

The last sense that we consider is touch. When walking and keeping balance become more difficult, every unevenness in the flooring will be noticed. The sense of touch becomes more important as mobility and sight capacity decrease. When progressing slowly, each little detail of the applied materials of the surrounding space is experienced. What does the floor feel like to the feet –

Older people need much more daylight to perceive things correctly than younger people.

Holland Festival Pavilion by Zaha Hadid

hard or soft? Are there joints, rims, and thresholds? What is the wall like, is it straight or curvy, warm or cold, are their objects or doors or openings, can I grab something to hold on to if I want to? Spaces will have to be designed literally step by step. The materials applied to the floors and walls can accompany the routes through a building and indicate the difference in function and character between spaces.

New Communities
Such careful ways of designing can do a lot for older people to keep their independence and autonomy intact. But evenly distributed daylight, good acoustics and great indoor air quality is in fact about designing better, healthy buildings: it is beneficial for everybody, not just older people - albeit extra important for them.

This way of designing will thus become part of every household only with different software for different needs. Dwellings will have to be flexible enough to change according to altering needs anyhow – why not make every house like this? Fit for elderly people, but for young people as well?

People live together in all kinds of social configurations, and the healthiest, most resilient social structures exist in living environments with enough diversity. Housing blocks should facilitate diversity in age or background as much as possible, and dwellings should be designed so that they can comfortably house different kinds of inhabitants.

For elderly people and their families this could imply different ways of living together. Flexible floor plans allow for family members to temporarily live close

to their elderly relatives, without literally moving in with them. In this way they can take care of them but keep their privacy. Families might opt for a house where they live next to the grandparents with a connecting door between the houses, living together but each in their own domain. Or we could think of a 'friends house' – living apart but sharing the kitchen. In short, people live together in such various ways this has to be reflected in diversity of housing types and flexibility.

Living environments can acquire all kinds of new social dynamics and relations that could also partly eliminate the demand for 'official' care provided by a health care organisation. In a strong social community, the neighbours or the family can also provide everyday care from time to time – the building can stimulate that social dynamic by organizing its infrastructure around a central connective space. Here, people can share services, for different reasons – a meal for instance, because they feel too old to cook every night, or because they work so hard.

Designing for diversity and social resilience can get elderly housing and care out of the 'problem zone' of being too expensive and under too much pressure. If we truly design healthy living environments, and if we provide a solid social framework within the building by adopting different housing typologies and functions into a versatile spatial framework, we can come to a new kind of urban community. One where care is more naturally integrated in the home environment. Design for autonomy can paradoxically mean to design for community – it's design for increased awareness, of each other as well.

A standard life biography in 1960

youth & education — career & family life — retirement

A standard life biography in 2000 and beyond

early youth — young adolescence — career & family life — active old age — passive old age

Towards an unchronological life biography

Trend research is usually found at an early stage in innovation chains. Researcher Jacomine van Veen (Likely): "I often see my research coming up in innovation processes. I advise on these sorts of processes and I work a lot with designers. But the ultimate aim of my work is to help companies make practical use of trends. To help them become more aware of individual needs, and therefore better prepared for the changes the future will bring."

Just as in Waag Society's 'Users as Designers' method, for Jacomine, the end users occupy the centre stage – albeit in a very different way. "I translate end users' perspectives to trends. When I'm working with designers I provide strategic guidance by defining scope, but my input is most certainly not directive."
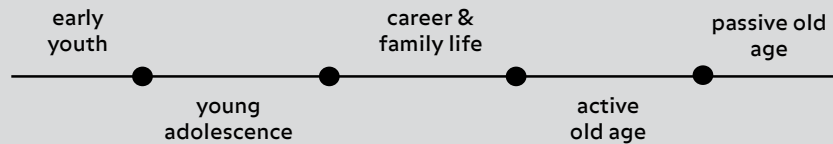
Research method
Jacomine has developed her own trend research methodology. "It combines existing methods", she explains. She conducts desk research and interviews experts, while constantly on the lookout for signals in news sources and blogs. "I prefer to analyse the information I collect together with other professionals, to get a variety of perspectives. Then I combine all the data and search for signs of change."

Jacomine distinguishes herself from other researchers by doing tailor-made studies. "I don't believe in general trend research. I look for the trends that are relevant to the domain in which my client works." She is often given very specific questions, and dives into the subject as deep as possible. For example, a hearing aid manufacturer recently commissioned her. "I first hunted out every research paper already written on the subject. Why repeat someone else's work? Then I accompanied people going in to have their hearing tested. And I wore a hearing aid myself for a while, too."

The aging population and baby boomers
Jacomine sees our aging population as a growing challenge for designers. But on a positive note; her research clearly shows that baby boomers embrace technology. She therefore advises designers to adopt older people as their starting point for once. "Let them be the opinion leaders. Make them your target users, instead of just saying 'Oh, older people will like this too'."

In one of her recent research studies she noted that it was becoming ever more difficult to attribute people's characteristics to their age. Our lives used to be divided into fairly well demarcated life phases, each with its own responsibilities and activities. But today our life stories are more diffuse and much less linear. Roles are less tightly bound to age, and different life stages are increasingly overlapping. Jacomine calls this the 'unchronological life biography'.

"The phase during which we care for a family is shifting", she explains. "Women are having children later and later in life. Large numbers of divorces and new subsequent relationships mean that many people go on to start a second family, which also extends this care-giving phase." Jacomine believes that it is in the last phase of life that the greatest change can be seen. "Almost all early-life activities are now reappearing towards the end of life. Caring, studying, dating and working are increasingly becoming normal parts of older people's daily lives. The whole idea of drawing a pension and lazing around all day is entirely outmoded. Older people often seek to lead full and active lives, and sometimes they have no choice. Many baby boomers are caring for elderly parents while their own children and grandchildren are also demanding their attention. This is the 'sandwich generation'."

Having seen that roles are less closely linked to actual age, and that life stages are increasingly overlapping, Jacomine thinks it would be interesting to design without regard to age. She considers that designers in particular can overturn these stigmas. This might lead to solutions in which negative aspects become positive ones. "For instance, why not think of hospital waiting rooms as places that could be really beautiful and comfortable? But while this can be a good solution for life's smaller problems, I think it's important that we go beyond 'nice'. That's what I like so much about the work of the architect Matthias Hollwich; he provokes people, goads them into action." Jacomine says that designers should start thinking about 'ageless' people: in other words, start doing 'ageless' design. "Working without these kinds of traditional, age-related profiles brings great freedom and can lead to new insights."

Column

ICT: a health care panacea?

BY JET BUSSEMAKER

"Today, we are facing rising health care costs and growing staffing shortages: in 2025 we're probably going to be looking at a shortfall of 450,000. And putting extra hands around the bed is not going to solve this problem. It is just not realistic to suppose that a shortage like this is going to fix itself spontaneously, which is exactly why developing intelligent ICT applications is so important in health care. The challenge here is to match technological applications on the one hand, and the experiences and feelings of clients and the professional ethos of care workers on the other.

This has often proved somewhat problematic in practice. For instance, I set up the Care Innovation Platform with ex-minister of Public Health Ab Klink. It was a fantastic idea, but the implementation didn't work. It turned out to be difficult to generate momentum with the good examples – and there were bad examples in practice, too. A large home care organisation had planned to provide patients with a computer, enabling them to maintain their own medical data. This would save time, as house visits would no longer be necessary. But the patients rejected the plan, out of fear of isolation – and caregivers missed the contact with patients, too. Where did this go wrong? Upper management was trying to devise solutions to practical problems, but those working on the front line were involved too late. Now we know that feasible innovative solutions can only be devised and implemented in collaboration with different parties.

With this in mind, I am glad to say that there are countless examples of successful health care innovation. The Buurtzorg project, for instance, in which self-directed nursing teams visit patients and use handheld computers to keep track of their medical details. The information is immediately shared with their colleagues, making extensive meetings redundant and freeing up time for real contact with the client. I'm also closely following progress at the Amsterdam University of Applied
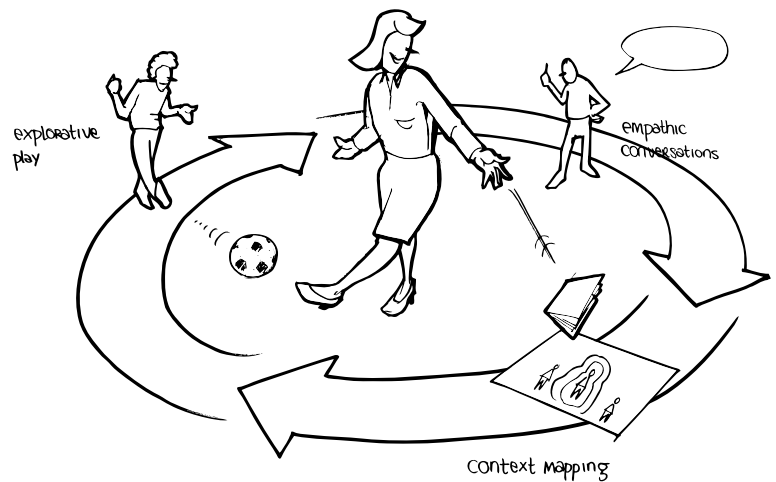
About the author
Jet Bussemaker is vice-chancellor of the Amsterdam University of Applied Sciences (Hogeschool van Amsterdam) and a member of the Board of Governors of both the University of Amsterdam and the Amsterdam University of Applied Sciences. She was previously Secretary of State for Public Health, Welfare and Sport (VWS). From experience she speaks on the current health care climate in the Netherlands, and on the role that she feels innovation and ICT should play within this domain.

Sciences' Health-Lab, in which practical situations are being simulated in order to test the effects of ICT instruments. This project, which is conducted with different partners such as Waag Society's Creative Care Lab, gives us an opportunity to find out whether an idea is feasible in practice, and helps to avoid heavy investments that turn out not to deliver the desired results.

The same applies to prof. dr. Ben Kröse's – professor Ambient Robotics at the UvA and lector Digital Life Hogeschool Amsterdam- projects, such as Digital life, in which he tests a new distance-care concept with users and his students. Sensors are used to report whether someone living independently needs medical support; for instance, an elderly person who has fallen down and needs help. Testing systems like this is hugely important, of course, but it's tricky too. You can't just ask an old person: "Please fall down, we want to see whether the system works!" So Ben Kröse is carrying out this test phase with students, which also gives them a chance to find out how technology can be applied to health care in a responsible, creative and innovative way. This is vital, because if they get to know about it now, they'll be more receptive to future innovations. These kinds of projects show what it's all about: using technology as a means to support health care, and developing it from the perspective of those who will be using it in practice."

You can't just ask an old person: "Please fall down, we want to see whether the system works!"

Users as Designers

A design driven model for social innovation

Waag Society's main design philosophy is called 'Users as Designers'. It is a combination of existing and customized participatory and empathic design methods that have a qualitative nature and are drawn from art and social science. Miriam Reitenbach, design researcher at Waag Society, gives insight into the way Waag Society tackles social innovation.
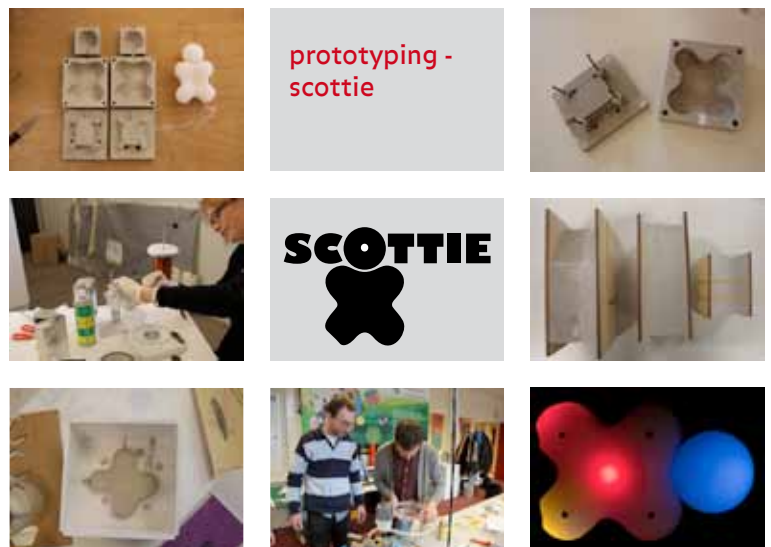
Waag Society has been working with the Users as Designers method for 16 years now. Our experience shows, that this design philosophy is particularly appropriate when more challenging user groups are involved, as they can help to facilitate the dialogue needed to elicit personal and contextual information, which helps to define users' needs and desires.

Instead of involving a large amount of users, Waag Society endorses a more intimate dialogue with a select number of users, often referred to as 'n=2', by listening carefully to their stories, feelings, beliefs and wishes. The details of their personal stories uncover inspiring design insights leading to new solutions. This intimate dialogue makes the user part of the design and development team, and the signatures of the designer and the user appear both in the development process and in the developed product or service.

This dialogue can be enhanced or supported by various means. Empathic conversations are a prerequisite for building relationships between a design team and future users. It is an open, personal and intuitive approach that helps to create a deeper understanding of each other's views, possibilities, but also limitations.

Interested to read more about our design philosophy? Download the publication 'Users as Designers' at:

waag.org/researchpublication

Sample page from 'Users as Designers', showing the health care project 'Scottie'
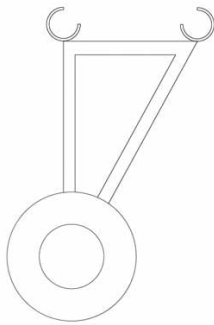
Sharing experiences

After 16 years of experience with various user-centred research and design methods, Waag Society decided to stand still and reflect on the methods used so far. Here are some examples of lessons we have learned in the past years:

- Interviewing users at home, in their own comfort zone, is more likely to elicit authentic and personal information, as well as insights that come from simple observations of the home situation and certain routines.
- A conversation is not just a starting point, but a process in itself. Share your interpretations and conclusions in an open way with the users; seek and use their advice and response. Keep them involved.
- Get to the underlying needs and desires of the users by observing their real-life context rather than by just asking them.
- Get under the user's skin. Did you ever try to immerse yourself in the context situation? For a day, or a whole week? Ask participants to depict their context and experience by giving them diaries, or a disposable camera with instructions.

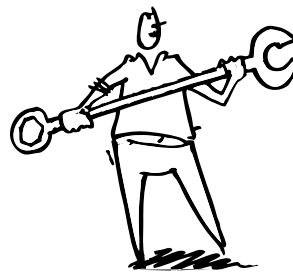# Fablab cares

two examples

Doorstep climber

A Fablab is a place for personal fabrication, where you can make almost anything with digital machines, such as the 'Doorstep climber', a device to make public spaces more accessible for wheelchair users. It is developed for – and by – Eric Groot Kormelink at Waag Society's Fablab in Amsterdam.

From the inventor, Eric Groot Kormelink:
"Many buildings and public parks are still designed only for people who are able to climb up small steps. To overcome this problem I wanted to make an attachment to the chair that will enable it to go over the most common obstacles, like doorsteps and pavements. In order to accomplish this I thought of placing ramps over the wheels that can be slided in front of the wheels, and retracted after use".

fablab.waag.org/project/doorstep-climber

Low-cost prosthesis

Within the Fablab prosthesis programme Waag Society's Creative Care Lab plays a role in developing a low-cost, self-adjustable 'lower leg' prosthesis in line with the open innovation principles, so that end users, designers, researchers and manufacturers arrive at product innovations by joint effort. The Fablab prosthesis programme is developed in collaboration with the HONFablab Yogyakarta, established in the summer of 2011. HONFablab can help by meeting the high demand for protheses in Indonesia, with providing the production of prostheses for two people per day. In doing so, it empowers the local people by creating new businesses and by spreading orthopaedic knowledge.

For the Fablab prosthesis programme, Waag Society's Creative Care Lab is working closely together with one of her partners; the Dutch Centre of Research Excellence SPRINT (Smart mobility devices with improved Patient pRosthesis INTeraction).

waag.org/fablabprosthesis

We are talking about people - not patients, users or clients.

"It is far more important to know what person the disease has than what disease the person has." (Hippocrates)

There is no technology **without people**

Knowing is not just measuring. We need facts and figures, but it's more important to know how to interpret them.

Question the question!

Remember: **Everything big started small.** *(B.J. Fogg)*

Focus on what is possible, not on what is (or has become) impossible.

Health care is the sum of social, mental and physical wellbeing.

"Creativity is contagious. Pass it on!" *(A. Einstein)*

And don't forget: **play seriously!**

Care for Care Manifesto

waag society