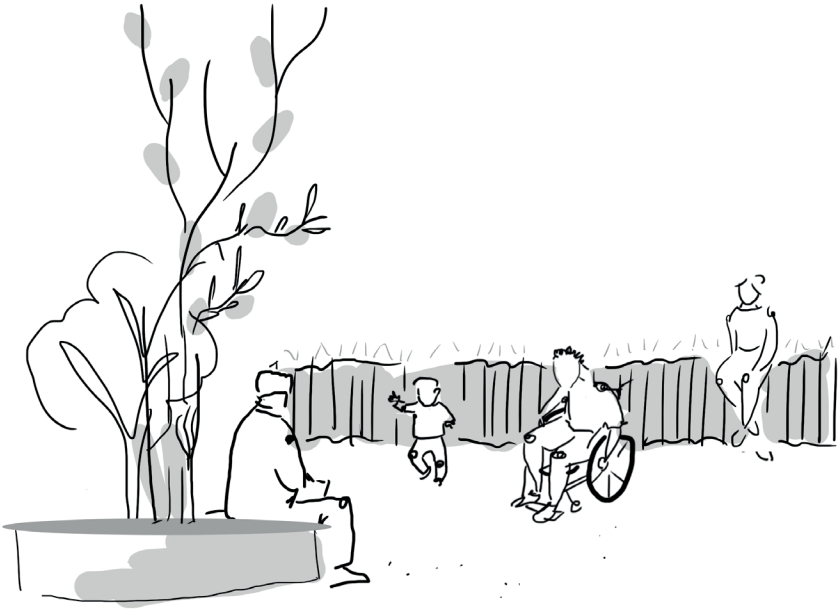
Age-friendly environment

Book of Abstracts of the International Conference



The conference took place on November 3rd, 2022 at the Faculty of Architecture and Design, Slovak University of Technology in Bratislava within Erasmus+ project **„DESIRE – Design for all: Methods to Create Age-Friendly Housing“**

DESIRE
DESIGN FOR ALL METHODS TO CREATE AGE-FRIENDLY HOUSING

BCDLAB
Body Conscious Design Laboratory
Faculty of Architecture STU Bratislava Slovakia

CEDA
centre of design for all

SPEKTRUM STU

Ústav etnológie a sociálnej antropológie
Slovenskej akadémie vied

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Age-friendly Environment
Bratislava, November 3, 2022
Faculty of Architecture and Design, STU in Bratislava
and Institute of Ethnology and Social Anthropology, SAV Bratislava

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DESIRE – DESIGN FOR ALL: METHODS TO CREATE AGE-FRIENDLY HOUSING

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Introduction

Project Erasmus+ DESIRE - Design for all applied to age-friendly housing, with an international partnership involving 4 countries, provides professionals in the building industry and home furnishings sector with the tools and skills to apply Design4All methods as an integral part of the design process, with the aim to create or adapt age friendly housing as a solution for the wellbeing, comfort and autonomy of the older adults or dependents at home.

Project partners are:

- Slovak University of Technology in Bratislava, Faculty of Architecture and Design and its research labs CEDA and BCDlab - coordinator - Slovakia,
- Institute of Ethnology and Social Anthropology, Slovak Academy of Sciences - Slovakia,
- CETEM - Spain,
- SHINE 2Europe - Portugal,
- InnoRenew CoE - Slovenia.

Why is the DESIRE project so relevant?

Europe is ageing. Eurostat population projections foresee that the number of people over 65 is expected to grow up to 28.50% by 2050. According to the World Health Organisation (WHO), the physical and social environment are key determinants of whether people can remain healthy, independent and autonomous long into their old age. Therefore, housing is an important determinant for active and healthy ageing. However, a large part of the housing stock in the EU has not been designed to accommodate the needs of older people.

This is a great opportunity for the building and home furnishings sectors. What is needed is to enforce innovative actions at training level to overcome skills mismatches and promote new design guidelines focused on older adults‘ needs.

The main objectives of the project were:

- to define the conceptual framework of the DESIRE training course and overcome skills mismatches on D4All at VET and labour market level,
- to develop an innovative training course on D4All to meet the emotional, cognitive and social needs of older adults while driving new opportunities in the habitat sector,
- to raise awareness about D4All and age-friendly housing in habitat professionals and general society as a key determinant of active and healthy ageing,
- to foster interactions and knowledge exchange in the design process between cross-cutting links such as Science, Social Sciences and Arts (Design, Habitat) to develop competitive and innovative products and services.

The partners in the project developed:

- a comprehensive guide of the training and employment skill gaps in D4All and the needs of older adults that must be addressed,
- an innovative curriculum and the development of the DESIRE training content,
- DESIRE Content Repository Platform.

More on the website: www.projectdesire.eu

Towards a person centred approach to ageing

From demographic change to holistic environments – WHO and SHAFE models

Carina Dantas, Juliana Louceiro

Keywords: ageing, Age-friendly environments, holistic environments, Smart Healthy Age-Friendly Environments; World Health Organisation

The European demographic change, in particular the ageing of the population, is a consequence of the evolution of health care and wellbeing and should be thus considered in a positive perspective. However, it has a major impact in different sectors of society: financial, social, educational, lifestyle, family structure, health and care, leisure, among others. These changes, mostly seen in western countries, but expected to be extended to other parts of the globe, require a new approach to the design of cities, communities and homes.

According to the Constitution of the World Health Organization (WHO) (2020), health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (p. 1). Well-being is a multidimensional concept that integrates mental well-being, emotional well-being, physical well-being and social well-being (WHO, 2012) and comprises an individual's experience of his/her own life.

Our physical and psychological capacity, essential for well-being, are impacted by the environment where we live since we are born, and this influences the way we adjust to loss of functions and other forms of adversity, particularly in later years of life. Although healthy and active ageing are a personal choice, they are strongly dependent of the environment in which we live, work, and socialize (European Commission, 2021).

The WHO "Healthy Cities" approach recognizes the determinants of health and the need to work collaboratively between public, private, voluntary and community-sector organizations. Through political, strategic and technical support, and capacity building, the WHO intends to engage the communities and societies in order to achieve change for the better, tackling inequalities and promoting good governance and leadership for health and well-being (WHO, 2015).

The concept of the WHO Age-friendly Cities framework was the inspirational grounds for the development of the Smart Healthy Age-Friendly Environments (SHAFE) concept. SHAFE is a holistic approach that optimizes social and physical environments, supported by digital tools and services, fostering better health and social care, promoting not only independent living, but also equity and active participation in society.

Smart, adaptable and inclusive solutions can help improve and support independent life throughout the course of life, regardless of age, gender, disabilities, cultural differences and personal choices (Dantas et al., 2021), as long as there is a concerted strategy, policy design and funding for implementation.

SHAFE aims to foster awareness and support to the creation and implementation of smart, healthy indoor and outdoor environments for present and future generations that will enable citizens to learn, grow up, work, socialise and enjoy a healthy life, by benefiting from the use of digital innovations, smart living and accessibility solutions and shared assistive models adaptable within the European setting (Dantas et al., 2021).

Only with the implementation of new and holistic concepts of living environments like the ones proposed by these models, it is possible to create communities where people of different age groups actively participate and are treated with dignity, facilitating intergenerational connection. This type of communities helps people to stay healthy and active throughout the ageing process, offering adequate support to those who can no longer take care of themselves (Dantas et al., 2020).

Figure: SHAFE model

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has a degree in Law, she is a PhD candidate on Biomedical Sciences and is the CEO of SHINE 2Europe with over 20 years-experience.

She is the Chair of the COST Action NET4Age-Friendly, Coordinator of the Stakeholders Network on SHAFE - Smart Healthy Age-friendly Environments and Vice-President of the European Covenant on Demographic Change.

Carina is evaluator/reviewer for the European Commission, Eureka, AAL, EIT Climate and EIT Digital; Committee Member of CEN/CENELEC TC 428 and member of the Expert Team developing the EU Ethics framework for the ICT Profession; and Team Leader of the group of experts designing the Reference Guidelines in the Field of Ethics, Data Privacy and Security, contracted by the AAL Programme.

She has written over 300 proposals for funded projects and implemented/managed several of them, for different funding programmes. Current relevant examples are SIRENE | Social Innovation Responsive Environments NETwork, an HORIZON Europe CSA, where she is the Project Coordinator; or RadioVal | International Clinical Validation of Radiomics Artificial Intelligence for Breast Cancer Treatment Planning, an Horizon Europe RIA where she leads WP1 - Multi-stakeholder engagement and social innovation.

Also, Carina is Ethics Board Member of the H2020 Valuecare and IMI Beamer projects, Advisory Board Member of the Horizon/MSCA/AAL projects ReHyb, VisuAAL, PRO-Care4Life, Tactile, Homes4life, Uptake, DTHSC, and reviewer of ICF Journal, Geriatrics and MDPI.

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She worked several years as a Harm Reduction Specialist, with people with addictive behaviours and sex workers, and as a non-formal adult educator in areas like citizenship and parenting. In labour and academic terms, her main interests are linked to combating social exclusion, which can happen in different forms.

At SHINE 2Europe she develops work related to project management and research, being involved in several projects related to discrimination and interventions that tackles it, and also ageing and how can building spaces and communities be more adapted to all ages.

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Design Anthropology: Ageing at Home

Soňa G. Lutherová

Keywords: anthropology, anthropology of design, ageing, housing, home

Each one of us has many ideas about ageing. When we are young, in our minds, we create notions of what it means to grow old and how it is experienced. What are older adults' motivations, and what drives them? What are the challenges and obstacles they have to overcome? What are their needs, and how can designers and architects possibly help them in their everyday lives? Being young, our ideas often originate from their own limited experience and might be affected by various preconceptions and biases. Because of this, we need to rethink and reconsider socially and culturally inflected phenomena that come into play when we think and talk about ageing.

In Western culture, one of the most prominent ideals is ageing in place. For many older adults, the prerogative is to stay in their own homes and not move into a care facility. Ageing in place is an essential strategy and adaptive feature of ageing (Rowels & Ravdal 2002), playing a vital role in maintaining the continuity of the life cycle (Sixsmith et al., 2014, 7). Intrinsically, this also relates to home as a process connected to identity- and self-making (Lutherová, 2009; G. Lutherová, 2014), concerning the feelings of staying in control and notions of privacy and intimacy.

Photo: Zora Paulíniová

This is when designers and architects might come into play as the ones who can recreate the older adults' housing so that it accommodates their changing needs and obstacles in their everyday lives. Sometimes, the goal is to create a new environment (be it in care institutions or elsewhere) so that the clients would feel at home. In this process, designers and architects can acquire the perspectives, approaches, but also practical research tools of social anthropology and ethnology. The goal should be combining their intuitive approach with gaining a deeper insight into the social and cultural processes (Clarke, 2011).

In the paper, I approach anthropological concepts which we defined as relevant concerning the socio-cultural perception of ageing in the training content of the project DESIRE: culture, space/place (and home), time, age, memory (and self), and inclusiveness and exclusiveness. These all need to be accessed and reflected by design and architecture practitioners to design an inclusive and meaningful environment, not only for older adults but, ultimately, for all.

Soňa G. Lutherová
is a social and visual anthropologist and ethnologist. As a senior researcher at the Institute of Ethnology and Social Anthropology of the Slovak Academy of Sciences, she focuses on identities, family, individual and social memory, and the material culture of households. She is also interested in applying innovative and reflexive methods in ethnographic research. She has taught, researched, and studied at universities and research facilities in Slovakia, Sweden, the Czech Republic, and Austria. She is the author of many scientific papers in foreign and domestic journals and monographs. In 2017, she edited (with M. Hlinčíková) the book Beyond the Borders of Science? Applied Anthropology in Society. She is the editor of the Slovak Ethnology scientific journal and is the author and director of the documentary films Flooded (AH production, Slovak Radio and Television, Slovak Film Institute, 2018) and A Happy Man (Azyl Production, Company F, HBO Max, 2023). She also focuses on the popularisation of scientific knowledge; since 2021, she has moderated the Scientific Podcast of the Slovak Academy of Sciences and wrote a children's book Can Superheroes Wear Glasses? (E. J. Publishing, 2019).

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Design Anthropology: Ageing Body

Ľubica Voľanská

Keywords: ageing, design, embodiment, ageism, human becoming

The ageing body is "both creator and product of the experiences configured by our material worlds, such as the spaces we live in and environments in which we move". (Katz, 2011, 188)

Ageing is often perceived through the body, and although ageing of the body is an inevitable fact in contemporary society, society usually determines how the body will be viewed. Therefore, it often happens that the first time the older adults feel old is after they become involved with the biomedical health care system. Moreover, they often run in the risk of being reduced to ageing and, most of the time, an unhealthy body, not a whole being, with their perspectives, motivations, and habits. The professionals - designers and architects designing living environments for older people are well-informed about bodily changes and typical health problems that might be connected to ageing.

Photo: Zora Paulíniová

But at the same time, we should pay critical attention to how we approach older clients, as generalisations often lead to ageism.

What can be the possible response to ageism related to the medicalisation and professionalisation of old age, the risk of polypharmacy, neglected care, and mental illness being mistaken for symptoms of ageing and vice versa?

There exist the assumption questioning the competency of variously disabled persons: their inability to understand and make choices in one area is often generalised and also includes decisions in all areas (Post et al., 1995). On the contrary, the perspective of human becoming (Parse, 1998) seems inspiring, where people are appreciated as unitary wholes who relate distinctively and are free to choose their way within the circumstances of their lives. Researchers guided by the human becoming theory believe that only the person living the life can describe its quality (Parse, 1994) and that this applies to all persons. The knowledge that mentally disabled people are able to participate in qualitative studies actively and respond to open-ended questions in a meaningful way might be inspirational when designing and creating the space for and with them.

Ľubica Voľanská
is a senior research fellow at the Institute of Ethnology and Social Anthropology of the Slovak Academy of Sciences in Bratislava. She studied ethnology and history at the Comenius University in Bratislava, the University of Regensburg and Vienna University. Her main area of interest includes ageing, old age, (auto)biographical research, family and kinship, and intangible cultural heritage. She focuses mainly on the connection between the "big" history and the lives of individuals in the context of the social structures they are a part of.

She has extensive expertise in lecturing and contributing to international conferences. Her skills include research and project design, including methodological tools and project management, where she enjoys working with people from various backgrounds. As the main editor of the Journal Slovenský národopis/Slovak Ethnology, she recognizes the importance of presenting scholarly knowledge on any topic in an understandable way.

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Constituting personhood and making a home among older adults in a nursing home

Anna Žabicka

Keywords: ageing, nursing home, personhood, space-making, public-private

In this paper, I am trying to answer the question of what makes people feel at home and what is not and how older people in care facility claim space as theirs. I do that by relying on a long-term ethnography at a nursing home for older adults in rural Latvia. I also rely on a visible contradiction: a public municipality-funded care facility, that is, a place that seems as un-homey as possible and oftentimes is, and how through different activities clients take back the public space and make it into their private spaces of living.

I show that besides personal belongings like photographs, personal furniture, tableware, and well-known environments that most older clients have lost due to moving or precarious living conditions before the nursing home, it is meaningful activities that constitute personhood that matter for making a home. Such daily and quotidian activities like coffee drinking, chatting with loved ones and new friends at the nursing home, ability to cook food and treat guests, celebrate birthdays the way they want, drink alcohol, and have sex participate in sustaining the personhood in a future-ori-

Photo: Anna Žabicka

ented way and thus also homemaking. Such activities also have the power to cut through the very institutionalized regime of care facilities and a growing number of drug and bodily care regiments that accompany late life and therefore give back a sense of autonomy and belonging.

Foto: Anna Žabicka

Anna Žabicka

Anna Žabicka holds a master's degree in social and cultural anthropology from Wayne State University (Detroit, MI) and Rīga Stradiņš University (Riga, Latvia). Currently, she is writing her dissertation at the University of Vienna with the support of the Marietta-Blau Grant. In her Ph.D. research, Anna studies ageing and institutional late-life care as a relational practice and a resource for social reproduction in emptying rural Latvia, paying special attention to experiences of ageing. Her main research interests are in medical anthropology, ageing, care, and health equity. Anna has worked in studies of ageing since 2012.

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Active ageing

The built environment and older adults: Active and healthy ageing in place

Matic Stašek, Nastja Podrekar Loredan, Nejc Šarabon

Keywords: physical activity, older adults, healthy ageing, built environment

The population of the European Union is ageing rapidly. For this reason, the need for action to maintain and improve the health and well-being of older adults is the most important milestone of most European Union perspectives. In the coming years, it will be necessary to focus efforts on prevention and reducing the overall burden of chronic noncommunicable diseases and disabilities worldwide. This could be achieved primarily through behaviours and interventions that help people maintain their health and remain mobile and independent throughout their lives. Because the built envi-

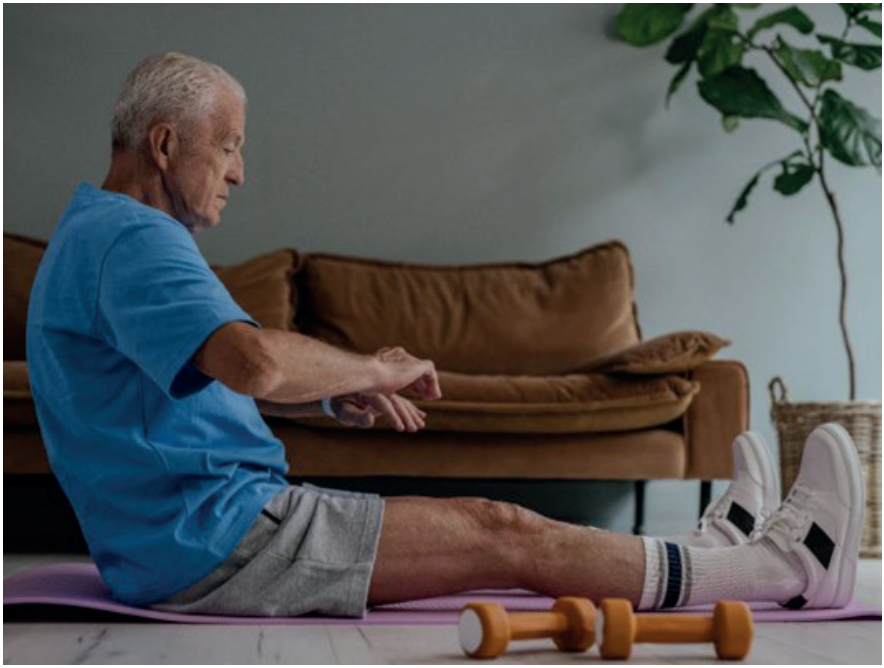

Photo: SHVETS production (Pexels)

ronment has a major impact on the health of older adults, it is desirable for them to age in place. This means that they should have the opportunity to live safely and as independently as possible in their own homes or in the community, regardless of their income or functional abilities. Ideally, an environment that is adapted to individual bio-psycho-social needs would provide the greatest health benefits (Sixsmith et al., 2014).

Ageing is a specific process that also affects human body systems. Therefore, basic gerontological and pathophysiological considerations influence the way professionals approach the provision of age-friendly housing. The normal ageing process is associated with changes in body systems that contribute to a general decline in some functional abilities of older adults. In addition, several chronic conditions that become more common with age can actually accelerate the loss of function.

In contrast, healthy and similar lifestyle habits can slow down the ageing of body systems. Among others, physical activity has a significant impact on the function of the cardiovascular, pulmonary, nervous, and musculoskeletal systems (Daskaloupolu et al., 2017). Therefore, the living environment of older adults should not only provide safety, comfort, and independence, but also enable and promote physical activity among older adults. Introducing and promoting physical activity among older adults and implementing the most efficient types of physical activity, such as strength, endurance, and balance exercises, in the living environment are critical to older adults' health (Bull et al., 2020). Incorporating the most important aspects of a healthy lifestyle into the Design for all methods to create age-friendly housing (DESIRE) could lead to a significant increase in the quality of life for older adults.

Matic Stašek

Matic is an assistant researcher at InnoRenew CoE and a PhD student at the Faculty of Health Sciences, University of Primorska. His main fields of interest are biomechanics, sports performance and physical activity in the working population and the elderly. At InnoRenew CoE, he is working in the Human Health in the Built Environment research group.

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Exercise and ageing

Dušan Hamar

Keywords: ageing, exercise, quality of life

The ageing is a natural progression of human life cycle starting with conception, proceeding to birth, growth, and maturation, passing adult period and finishing with old age and death. Age related changes, starting already after maturation, are characterised by deterioration of function of particular organ systems, namely cardiorespiratory, musculoskeletal, neural, reproduction, sensory, and gastrointestinal. Worsening of physiological functions accompanied by negative morphological changes, though at the beginning barely noticeable, may have insignificant impact on activities of daily living and finally also on quality of life. Gradual loss of cardiorespiratory function leads to decreased tolerance of aerobic exercise. In addition, increase of perceived exertion, while performing tasks of everyday life, impede physical activity with further deterioration of physical fitness. Such a vicious cycle can only be broken by voluntary physical activity.

The similar concept applies to muscle strength. Its rapid loss in subjects over 60 accounts for about 1.5% annually. If further accelerated by lack of physical activity, it may not only substantially limit many tasks of daily life, as raising from chair, stepping

Photo: Active ageing centre

the stairs or even carry shopping bag, but also negatively affects control of static and dynamic balance with significant increase risk of falling and resulting injuries.

Other negative phenomenon of ageing is a loss of bone mass and its mineral density may remain silent for years only becoming evident by sudden pathological fracture of vertebrae or hip. Deterioration of immune functions, both cellular and humoral, leads to increased incidence of oncological diseases as well as more difficult coping with infection diseases. Changes of cognitive functions, namely if aggravated by pathological neurodegenerative processes affecting brain tissue, may have very negative consequences not only for affected seniors themselves, but also for individuals living with or taking care of them.

Though the age related changes depend to large extent on genetic disposition they can be substantially modified by environmental factors, namely diet and exercise. That means that most of the negative changes can be slowed down, or even temporarily reversed by an active healthy lifestyle. This may not only increase quality of life of senior citizens, but also positively affect socioeconomic status of entire society.

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Age-friendly built environment

Cities for all: seniors as co-creators of public space

Zora Pauliniová

Keywords: participation, public involvement, co-decision-making, place-making, active creation of public space, marginalized groups, spatial exclusion, spatial inclusion

Imagine a smaller square with many people who met at a community event. They listen to the discussion about the future of the location, fill in the problem areas of the neighbourhood on the map, look at posters with the questionnaire results or have a lively discussion. Such meetings with the local community, which often come at the end of long and complex participatory processes, are pleasant and motivating. However, for participation to become a natural part of planning processes, the paradigm of looking at who can be an active co-creator of the environment they use must be changed.

The principle of participation is cited as a key aspect of a well-governed society. Public participation is based on the belief that those affected by the decision have the right

Photo: Zora Paulíniová

to be involved in the decision-making process (International Association for Public Participation, 2007). We talk about public involvement mainly because of the change it brings - it enables the participation of various marginalized groups and their transformation into active creators of public policies or other outputs. Therefore, senior citizens can be more than just those who are examined and observed if we want to design a suitable environment for them; but those who actively create something and participate in decision-making.

A specific area of participation is place-making, an approach that allows the designing of public spaces with the involvement of the local community in the process of planning and implementation. An essential aspect of place-making is considering input from the community for which the public space is intended (how the space works or should work; what is and what is not important to other community members). Thus, streets and squares can become places of well-being, belonging and inclusion.

The importance of public space increases when we realize that places and neighbourhoods where several vulnerable groups live, including seniors, can often be locations with low-quality apartments, without services, accessible public transport, and a lack of high-quality greenery. Compared to other localities, public spaces here fulfil a more intensive function of basic needs. A typical feature of these sites is gathering because

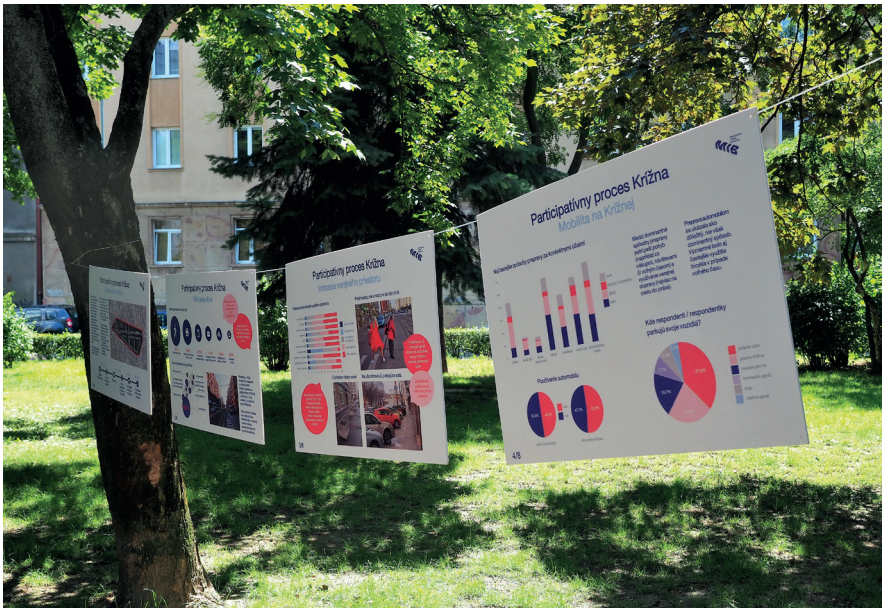

Photo: Zora Paulíniová

there is no other place for the communities to use. In one place with a low standard and quality, homeless adults, children, young people and seniors meet, which may lead to spatial conflicts.

In such cases, city officials or planners have a unique, albeit challenging, opportunity to involve seniors and other groups in planning and let them define what the shared space and cohabitation should look like. Change can happen through top-down participation (cooperative improvement), which leads to higher quality outputs from the process, but also through bottom-up (collaborative empowerment), where public space is gradually transformed into a lively and active community space in which, in addition to physical aspects, also social and cultural aspects are present. We already have several examples of such participatory processes in Bratislava.

Zora Pauliniová
combines her role as architect and facilitator in involving the public in decision-making. She has extensive experience as a facilitator of participatory processes. She is the co-author and editor of several books on public participation in policy-making, public spaces, and community development, for example, “Civic Participation”, “Public Spaces”, and “Change Begins Together: How to Create and Strengthen Community”. She also participated in creating several public policies (Strategy for the development of the culture of the SR, Strategy for the integration of the Roma of the SR, and Strategy for the development of the creative industry).

She currently works for the Bratislava municipality (MIB; the City of Bratislava - Office of the Chief Architect, Social Affairs Section) on the preparation and management of long-term participation processes in the creation of public policies, but also participates in the preparation of methodological or strategic documents (Manifesto of public spaces, Manual of participation, Plan Bratislava 2030).

She is a member of Cyklokoalícia, and you can meet her on a bicycle in the streets of Bratislava throughout the year. With her camera, she has been documenting Bratislava’s public spaces and their events for a long time. She is also a member of the association Zrejme, which is dedicated to dialogue between different generations.

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Age-friendly residential buildings

Zuzana Čerešňová

Keywords: Design for all, Universal design, adaptable housing, accessible environment

An important part of creating an age-friendly environment is taking into account the diverse physical, psychological, cognitive needs and individual requirements of all people. When designing a residential environment, it is necessary to implement human-centred methods, such as Design for all/Universal design to create an accessible, comfortable and safe environment for all people (Rollová, Čerešňová, 2015). These methods provide a sensitive and economical way to achieve the integrity of the design of the built environment with the diverse requirements of people (Mace et al., 1991). If these methods are applied at the beginning of the project creation process, they do not represent increased costs and reduce the need for additional expensive construction modifications in the case of removing barriers in the environment.

An age-friendly residential environment should be adaptable in relation to people´s life changes so that it enables independent living and the possibility of staying in one's own home in a community environment (Ratzka, 1996). Some countries, especially in Northern Europe, have defined requirements for adaptable housing in legislation and

The spatial solution of a bedroom (student: Tomáš Franko, 2021)

put them into practice (Andersson, 2011; Swedish Standard, 2006). Examples of good practice show us such an environment that does not create barriers for people of different ages, which significantly helps social inclusion.

A universally accessible and adaptable living environment includes the physical and cognitive accessibility and visitability of all residential buildings and housing units (Maisel et al., 2008), rather than creating so-called "special purpose" apartments or houses.

Adaptable housing allows for spatial and interior adaptability and flexibility, for example, it is possible to change the size and number of rooms or combine spaces if necessary if the family grows by new members or grandparents. Adaptable housing provides the opportunity to make the necessary adjustments to the layout of the apartment in a short time, with low costs and without changes to installations, or the supporting system. The spatial solution of an adaptable apartment allows the movement and manoeuvring of a person in a wheelchair (sufficient width of doors and corridors, accessible bathroom solution with toilet, manoeuvring space in rooms, reach distances of elements and devices) and uses movable and adjustable elements and devices according to the current needs of the people. Such an environment enables more independent and comfortable functioning even for older people, who are thus not forced to move or expensively remove the barriers in the residential environment.

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is an associate professor at the Faculty of Architecture and Design of the Slovak University of Technology in Bratislava. She is a member of the Centre of Design for All (CEDA) and EIDD – Design for All Europe. Her activities are focused on human-centred design methods to create an inclusive environment. She is a lecturer and supervisor of the subject Universal Design, as well as a coordinator and researcher of national and international research projects. She completed several foreign research stays, for example in the USA (Fulbright Program), Belgium, Norway, and Sweden. She has published more than 100 professional and scientific articles on universal design, and is also engaged in project work.

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Wayfinding in age-friendly residential environment

Michal Kacej

Keywords: wayfinding, cognitive, accessibility

Each of us experiences the inconvenience of disorientation due to insufficient recognition of the environment. This is a direct consequence of the failure of the wayfinding process, even if it is not a person with Alzheimer's disease. Spatial disorientation causes feelings of uncertainty and has a notable negative impact on overall well-being for all of us.

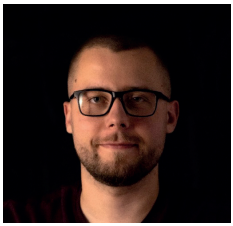
In terms of wayfinding, cognitive accessibility of built environment is a decisive characteristic of the environment, which essentially conditions the capacity for interaction and autonomy of each person and the chance for full social participation. The solution is to create a cognitively accessible environment, which facilitates the processing of information from the environment and which does not contain barriers, for people whose disabilities affect how they process information.

This is an architectural problem, since architects are and have always been responsible for the design of space. The built environment must be designed and organized

Photo: Retirement home Krupina, Slovakia, exterior visualization (architects: Michal Kacej, Zuzana Čerešňová, 2019)

with legible spatial composition that helps to perceive and understand the environment. This essential quality of the age-friendly built environment is mainly determined by primary factors, architectural design instruments, such as the appropriate approach, entrance, and circulation system.

The graphic orientation system and signage are very useful elements helping the wayfinding process, but cannot correct the errors of an inappropriate architectural design of the building. In an effort to supplement a large amount of graphic information in the environment, the effect is the opposite, a person's cognitive overload occurs, which reduces cognitive accessibility of building. The principles of correct placement of graphic signs on the interior and exterior of buildings will help us design a built environment that will facilitate wayfinding.



Michal Kacej

Michal Kacej is an architect, teacher, researcher and external doctoral student at the Faculty of Architecture and Design of STU Bratislava. Since 2017, he has been a member of the CEDA (Centre of Design for All). He specializes in the cognitive accessibility of the built environment and wayfinding, as the solver of his dissertation topic and several other research projects. International projects include the Project DESIRE - Design for all: methods to create age-friendly housing and Project UNIALL - Accessibility of Higher Education for Students with Special Needs. He is also involved in national projects, the Project DI - Deinstitutionalization of Social Service Facilities of the Slovak Republic, where he works as a facility evaluator and expert consultant for the transformation of 10 large-capacity social service facilities, and is also a researcher in the Project PUN - Support for Universal Design, on which he researches tools and methods of implementing the universal design of the physical environment into practice in accordance with the provisions of the Convention on the Rights of Persons with Disabilities. He uses his theoretical knowledge in the design of various residential and civic buildings, interiors, and public spaces. He retroactively implements the experience of practice into pedagogical activity and the theoretical basis of the investigated topic.

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Reflection of ageing in design

Age friendly interior: what we should know about ageing by interior design

Veronika Kotradyová

Keywords: ageing, wellbeing, space arrangement, choice of furnishings and materials, floors

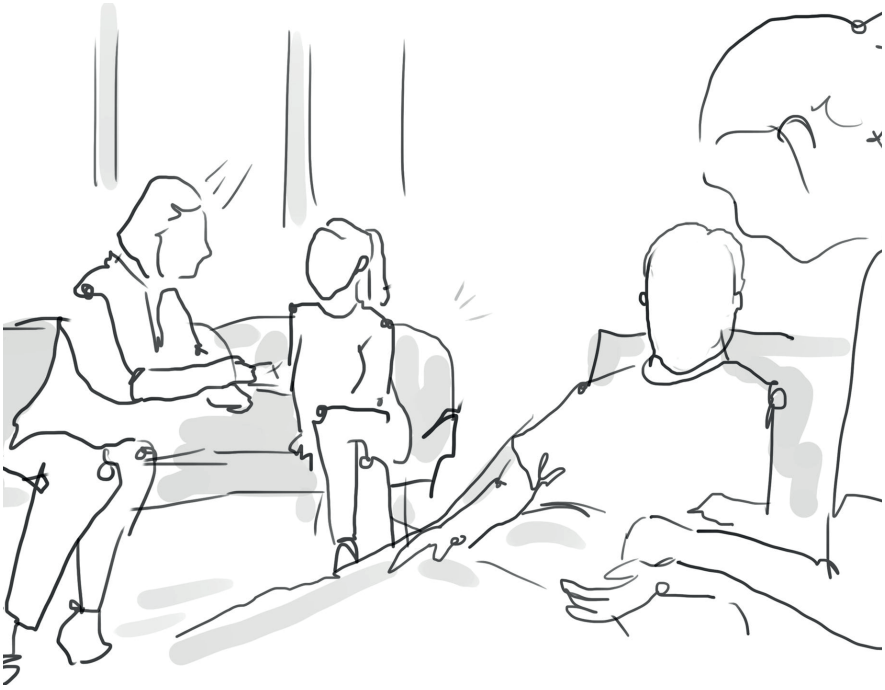
The behaviour, wellbeing and in long term also overall health of ageing users is indirectly influences by space arrangement, choice of artificial light quality, furnishing objects, materials and its surfaces. These factors have direct impact to measurable indoor climate as well (Kotradyová, 2015).

Space arrangement should be encouraging social interaction through mixing program of facilities enabling intergeneration exchange, appropriate zoning (active/passive, day/night zone) within housing units, serving as a tool for creating feeling of safety and privacy/intimacy, but at the same time prevention of social isolation, creating welcoming environment, with possibilities of individualisation and personalisation of spaces allowing attachment.

Kitchen for multiple users in a family type social facility (design: Klaudia Ridzoňová)

Age friendliness is connected with adaptable / flexible concepts of housing where universal design has its application, with no barriers and ageism, but also with high level of individualization. It is very challenging to connect requirements for general comfort with special needs by different kinds of health problems and impairments related to ageing. By built-in solutions it is convenient. One of the recommendations is dimensioning the storage spaces easy reachable also from seated position. But furnishings/mobiliar can be easy movable, adaptable, exchangeable, with optimized and updated ergonomics. Products have to be easy understandable and graspable/ pleasant to touch whereas natural authentic materials play a crucial role.

By choice of materials and its surfaces and colours, the maintenance is not only important issue. It is also needed to use contrasting colours or tones, e.g. between floor and wall should be sufficient contrast to make orientation in space easier. Handles



contact - interaction with family

Illustration: Barbora Valábeková; Welcoming environment in room supports social contact, quelle: MODULE 4, DESIRE repository platform

should be inbuilt around the space and into the furniture in a way that, to provide support of many kinds to motivate to move, but with its design does not remains kind of disability.

Important is a prevention of sedentary culture and support of motor skills, especially through self-sufficiency and spontaneous movement by ordinary daily activities within housing space, but also thought introduction of intentional power exercises and choosing of different body posture within in-built solutions (Kotradyová, 2018; Kotradyová, Šimková, 2021). Co-living with pets has social and health benefits too.

Within this problematics it is also necessary to consider sustainability issues, thus ¾ of the product life service is decided already by its design and universal design (Brinkman, 1995) and design for all, and human centred design is the way how to prevent many ecological problems.

Veronika Kotradyová
has been a professor at the Faculty of Architecture STU Bratislava, Slovakia, Institute of Interior and Exhibition Design, where she is a lecturer, researcher and project manager, Slovakia since 2002. She is a graduate of Wood science and technology faculty of TU Zvolen, specialization furniture and interior design. Beginning in Germany with eco-design, her research specialization is body conscious design/ human centred design, which she began in 2006 as a visiting Fulbright scholar at UC Berkeley, USA.

She works as freelance interior designer and consultant and author of many publications, which are the summary of her research, presented in form of lectures around the world within this conceptual framework. She is a founder of research and development centre Body Conscious Design laboratory/BCDlab at the FAD STU that is a platform for her interdisciplinary studies of comfort/wellbeing in microenvironment; since 2011 she has been dealing with the topic of interaction of wood and human and since 2017 with the research of regional identity in material culture within project Identity SK. Nowadays she is a coordinator of the ERASMUS+ project DESIRE, where she re-evaluates the principles from the ageing and age friendly environment point of view.

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Biophilic design: An overview of theory and practice

Dean Lipovac

Keywords: biophilic design, restorative environments, nature, human evolution

The modern human, homo sapiens, has existed for about 200,000 years, and the evolutionary roots of the species go back even further into the past, connecting to earlier human species and other animal species. Considering the hundreds of thousands of years of human evolution, most of what we consider normal today is a relatively recent occurrence in the history of our species. Food has been grown on a large scale for only 12,000 years, the city was invented only 6,000 years ago, mass production of goods and services began only 400 years ago, and electronic technology exists only since the 19th century. Our bodies and minds evolved in the natural world, not in the artificial world that we have recently invented.

People consistently rate the natural environment as preferred to the built environment, and after spending time in nature, they generally feel and function better. Their

Photo: Taryn Elliott (Pexels)

emotions tend to become more pleasant, their cognitive performance improves, and their physiological activation decreases, indicating less stress. The tendency of people to connect with natural systems and processes is called biophilia. It is thought that this inclination has become biologically encoded because it has benefited people throughout the long history of human evolution, which has largely occurred in a world dominated by natural features such as sunlight, water, vegetation, and animals. Environments that are less natural, with industrial production, technologies, and modern cities, have been present for only a small part of human history. As a result, most of our emotional characteristics and problem-solving capacities are still closely tied to the natural systems in which humans evolved as a species.

Biophilic design aims to address the shortcomings of the modern built environment. Its goal is to create a habitat for people that consider their needs as biological organisms. Biophilic design can generally be applied through three categories: direct experience of nature, indirect experience of nature, and experience of space and place. Direct experience of nature refers to actual contact with natural features, such as sunlight, plants, and water. Indirect experience of nature refers to a representation or image of nature, a transformation of nature, or patterns and processes characteristic of the natural world. Examples include photographs, artwork, natural materials such as wood and wool, and ornaments inspired by natural shapes, forms, and processes. The experience of space and place refers to spatial features characteristic of the natural environment that support the health and wellbeing of people, such as the integration of parts into a whole.

Dean Lipovac
completed a master's degree in applied psychology and PhD in renewable materials for healthy built environments at the Faculty of Mathematics, Natural Sciences and Information Technologies, University of Primorska, in Koper, Slovenia. He is a researcher at the InnoRenew CoE. His work is focused on researching the effects of the built environment on human mental health. He investigates how different materials used in indoor design influence physiological, emotional, and cognitive indicators of well-being. His long-term aspiration is to help create indoor environments that encourage a healthy mind and a healthy body.

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Age-friendly design. Why Product Engineering matters?

Juan Carlos Bañón Guillén, María Sánchez Melero

Keywords: age-friendly product, design, product engineering, European projects

Household items, clothing, automobiles, homes, and furniture are only a few examples of these elements' many different sorts and functions. They are irreplaceable and a part of our life at all ages. Although the products of design have a significant influence on people's daily lives, they are also influenced by the unique characteristics of the society or target audience.

Older people are the target audience for age-friendly design because they need goods, services, and environments that cater to their requirements, independent of their dependency (or lack thereof) on other people. In general, furniture of every shape, size, and function fills commercial and residential areas, lines showrooms, and is displayed at retail locations. Furniture makes spaces like homes, workplaces, retail establish-

Photo: CETEM - product development and testing

ments, and more feel liveable, cosy, and useful. In a similar vein, we can count on these commonplace items to live up to our standards of functionality, comfort, safety, and health. Additionally, the walls of a home are always a symbol of safety and defence. However, the things and accessories we adore the most may end up being hazardous if providers fail to thoroughly assess the hazards before releasing them on the market.

For this purpose, Product Engineering should be a top emphasis when designing or adapting homes to make them more age-friendly, especially if we concentrate on furniture. Knowing how to design or what to do to reach a solution makes it easier to solve problems or design solutions.

To this end, when creating and producing age-friendly furniture products, designers are likely to take into account a number of important factors, including safety regulations, furniture standards, functional dimensions, and measurement techniques; in addition to risk analysis and risk management, usability engineering of use, and CE marking ('Conformité Européenne'); among other directives and requirements.

A group of professionals in the CETEM Product Engineering along with Electronics and Domotics departments have years of experience in the technical creation of new,

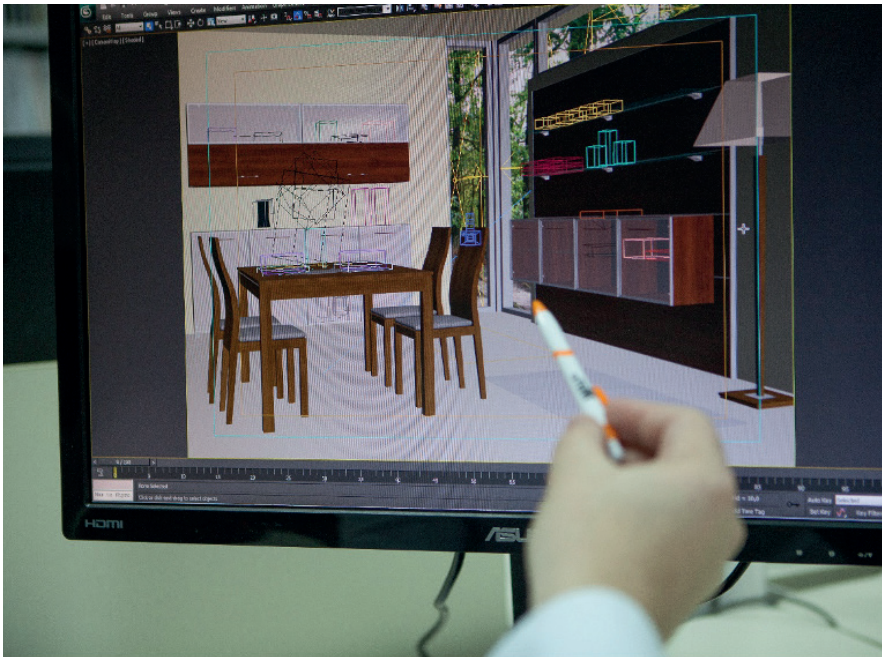

Photo: CETEM - product development and testing

cutting-edge products and solutions that are intended to make easier the daily life of elderly and disabled people while increasing innovation and competitiveness of furniture companies. In addition to some business solutions, CETEM is actively engaged in a number of European projects that address the urgent need to promote active and healthy ageing by means of design and state of the art technologies.

Juan Carlos Bañón Guillén

studied for a bachelor's degree in Industrial Engineering (four years) and also a Master's Degree in Industrial Engineering (two years), both of them at the Universidad Politécnica de Valencia, in Spain. He is part of the Product Engineering Department at CETEM where he deals with the technical development of products, 3D printing, product prototyping and testing as well as virtual simulation not only for the furniture sector but also for other industries. He also is involved in some international projects mostly related to 3D printing and design for vocational education and training. He has experience with CAD software, he has knowledge about rapid prototyping and additive manufacturing techniques.

María Sánchez Melero

María Sánchez works for CETEM in the International Projects department for more than three years. She holds a degree in Journalism and is currently studying for a master's degree in Sustainability and Social Responsibility Management. Her work focuses on project management, dissemination and quality control as well as arranging meetings and workshops. She also has experience in organising and coordinating research activities. She is currently in charge of several EU projects related to social innovation and design for the development of new skills and competences within the furniture and related sectors. María provides technical support to project teams on exploitation planning and reporting, dissemination and execution as well as project management and implementation.

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Humanity in design

Elena Farkašová, René Baďura

Keywords: humanity, design, interior, furniture, special needs, methodology, living with an animal

Humanity in design broadly explains "accessibility for all", the design and creation of products and services in such a way that they are as easy to use as possible for the widest possible range of people, regardless of their age, abilities, and limitations. Humanity encompasses all forms of design that respect the human being but also his/her living space (social, environmental, economic, physical...). Humanity, in our understanding, applies the knowledge of designers, and focuses their attention through experience, their own experience towards understanding the unique uniqueness of people (children, the elderly, the sick or otherwise limited). We seek an "all-encompassing" philosophy of solution. Humane design does not only focus on the production of specific special devices but seeks compromise solutions usable by all users or consumers. In its entirety perceived human beings are the real scale of all things and also of design. This scale is and must be multi-layered and inclusive of all minority or marginalized groups. It is of the utmost importance to be sensitive to these parameters and to naturally use insights from humanity in design practice.

Photo: Elena Farkašová

We systematically implement the issue of considering the diversity of users, acceptance of the heterogeneity of human needs, demands and abilities into the education of designers at all levels of study, but in a comprehensive way, especially through the teaching of Humanity in Design. To this end, we have designed and are testing a methodology that aims to develop in the designer a subjective sensitivity to the problems of specific population groups, empathy, and the ability to objectively identify user demands and define the characteristics of a future design solution.

Humanity in design includes not only human orientation but also human responsibility for other creatures. That is why we systematically include, for example, the topic of man and animal in the context of coexistence and mutual reciprocity in the field of design interest.

René Baďura
ia an Assoc. Prof., head of the Furniture and Interior dept., university teacher and designer. His aim of teaching includes the following subjects: Cultural Identity of Furniture and Interior Design, Design in the Environment, Design Studios, Ethics in Design, Furniture, Living and Public Spaces, as a Sign and Product of Human Culture, Humanity in Design. His target of research is in the field related to Human centred design, humanity, and acceptation of man in all circumstances, knowing variety of needs related to age and capabilities.

Elena Farkašová
is a design theoretician, curator of design exhibition projects (Longlife, Foodprint...), university lecturer at the Department of Furniture and Interior Design at the Technical University in Zvolen, lecturer at the Institute of Intellectual Property at the Industrial Property Office of the Slovak Republic. She mainly focuses on design theory and methodology, creative and humanistic aspects of design work, competence abilities in the field of design and studio work. Within humanity in design, she is mainly involved in the methodological part and research on the issue of coexistence with the animal as a theme in furniture and interior design.

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Age-friendly ergonomic design

Mária Šimková

Keywords: ergonomics, ergonomy, design, product design, age-friendly, simulation method, simulation, Instant Age

When designers create products for people, it is vital to understand not only the anatomy of the human body but also other human characteristics to design more suitable products. The goal is to ease life and help people in everyday situations. In the initial phase of design process, it is important to apply ergonomic principles to "design for people´s needs rather than their wants." (Papanek, 1984, 219).

The International Ergonomics Association (2000) defines ergonomics as a scientific discipline concerned with the understanding of interactions among humans and other elements of a system, and the profession that applies theory, principles, data, and methods to design in order to optimize human well-being and overall system performance.

When designing products for people in higher age, designers should consider various health issues which are often present. Prevalent are vision diseases, movement disorders (e. g. tremor), or hearing problems. To understand this target group even

Photo: Simulation suit Genworth R70, detail of the carousel changing of visual degenerations

better, simulation exercises have proven to be crucial. Especially when designers can experience difficulties they have never experienced before. Naturally, they can gain information by studying specific materials or directly from a target group (via interview or a questionnaire), but they can achieve better results when combined with simulation exercises. These can be done by wearing various simulation tools (e. g. simulation glasses, tremor simulator) or by wearing simulation suit. By wearing such suit one can instantly get a preview how body might behave at a certain age and can experience difficulties connected to higher age. However, such an Instant Ageing can be kind of a shock for designers. This may not be the case for people who have health problems or limitations, as they were developed for longer time period and people were able to adapt to them. Simulation exercises can even increase the level of empathy.

Designers are often perceived as care professionals as they meet needs through design and user expectations. Developed countries are an example of a process of transformation from a careless person to a caring person, from care to universal care, as claims Jiang Ying from Hong Kong Polytechnic University of China (Ying et al., 2018). Therefore, designers should also apply methods of Universal Design/Design for All.

Mária Šimková
is a graphic and product designer. She studied at the Institute of Design, Slovak University of Technology in Bratislava. In the field of product design, she focuses on designing for visually impaired and applying ergonomic principles in design process. In the field of graphic design, she focuses foremost on logo design, various types of advertisement, graphic design of publications and infographics. In her dissertation Ergonomics Laboratory. Simulation method as an improvement tool for design process she documented the importance of simulation method in learning process of designers. She is author of various scientific papers focused on this topic: Ergonomics as an important part of product design (2016), Simulation suits and their importance for design (2017), The impact of simulation tools on the design process (2018). Since 2020 she is lecturing Anatomy, Ergonomy and Universal Design at the Institute of Design, Slovak University of Technology in Bratislava.

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Junior researcher section

Doctoral research projects in their initial phase.

Age friendly environment – Design for seniors

Monika Hencová

Keywords: ageing, habitat, colors, perception, methodology

Ageing is not only a characteristic of the demographic development of society, but also an integral part of human life. A large part of the public and residential interior is not designed or adapted to the needs of the elderly (Glosová, 2006). The designer can make a significant impact on the quality of life for older adults.

My dissertation project explores the ageing of older adults in residential and public environments and, as a result, proposing sustainable concepts in product and interior design, looking for ways to address or reduce the impacts associated with an ageing population. Currently, I am searching for written sources and knowledge on the subject. In parallel with studying the issue, I want to continue interviewing specialists in ergonomics, physiotherapy and psychology focused on seniors and senior women.

Prof. Ing. Veronika Kotradyová, PhD. describes in her publications that people's affection for natural materials stems from the natural environment of man and his affection for nature. Natural materials and biophilic elements are close to our nervous system. Therefore, our body does not have to put extra energy into recognizing and

Interior visualization - self-service café (design: Monika Hencová, 2022)

perceiving them. On the contrary, it could be said that natural materials "recharge" us with energy. They are part of our traditional culture and it is appropriate to use them because they are timeless. In addition to the above-mentioned advantages, wood also has haptic, olfactonic and acoustic qualities. The preference for textures of natural materials is also justified by the fact that people's perception of black and white is better than color (Kotradyová, 2016). As we age, our visual perception changes, but also our sensitivity to certain colors. Elements that may compromise our safety should be designed in contrasting colors. A large number of colors can overstimulate our sensory perception (Rollová, Čerešňová; 2010). It is therefore important as we get older to re-evaluate the choice of elements in the environment in which we live.

In the last stage of the project, I will look for solutions that will help to provide equal inclusion opportunities to a vulnerable group of the population. This phase of the research should define the needs and constraints that this group of people face in both private and public interiors. The aim is to work repeatedly with a larger group of clients from a particular social services home on which the assumptions made could be directly verified. Working with the end-user will help to narrow down the selection of topics and come up with a design that is addressable. In connection with the interior design, it would be desirable to find a collaboration with the possibility of designing a specific project or renovation of the current state of the institution. This will result in the design of functional prototypes that will help bring all age groups together in shared spaces.

Monika Hencová is a first-year doctoral degree student at the Faculty of Architecture and Design, Slovak University of Technology with professor Veronika Kotradyová as her advisor. The topic of her dissertation project is „Age-friendly environment". Her work primarily focuses on private and public interiors.

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Age-friendly environment: Leisure time spent together

Martin Sombathy

Keywords: intergenerational programs, seniors and children, design, multigenerational space

My dissertation project is engaged in researching the use of design, and its approach to combining scientific disciplines as a tool that could assist in searching for solutions in complicated societal issues. The project is aiming to create a product concept that could be utilized to exhibit existence of alternatives to conventional notions about designing for seniors and children. A concept like this has a potential to initiate an open discussion between public and experts, as well as public and institutions.

The first stage of research associated with the project will focus on searching for local and international resources related to the topic of design that takes into account the parts of the population which has not reached yet or are beyond the productive age. The anticipated result is the collection of data demonstrating development of trends in universal design. At the end of this phase, the most interesting projects will be analyzed with the aim of finding options for creating leisure activities that would involve multiple age categories in shared environments.

Simultaneously with obtaining an overview of resources, interviews with experts specializing in sectors working with children and elderly people will begin. Doctors,

Photo: Seniors practicing poi spinning (https://spinpoi.com/five-ways-poi-improves-quality-of-life-for-seniors)

teachers in kindergartens and elementary schools, social workers in retirement homes will be addressed as a prime focus group. This stage of the project should reveal the intersections of the activities beneficial to both children and elderly population, be it the development and/or retention of fine motor skills, exercising the locomotive system, or removing mental burdens. The aim of these consultations is to obtain knowledge about existing types of activities, exercises, prevention, or therapeutic aids, and to acquire information about the current stage and attitude regarding multigenerational spaces in Slovak institutions. Intergenerational programs have been studied for extended period abroad, but the topic is still considered insufficiently explored (Wendland, J., Parizet, L., 2022).

Based on information obtained from the interviews thematic areas will be created, which will become a foundation for the development of the first concepts of leisure activity objects. These concepts will be eliminated gradually based on their feasibility, innovation, universality, as well as repeated consultations with experts from the previous phase of the project. In the end, one product or a series of products should remain, which will be developed into the final dissertation project outcome. Ideally, it should be usable both in interior and exterior. Tentatively, the project envisages designing playgrounds and objects for play.

The final phase of the project includes the product styling, creation of a functional model in full scale, and testing it with users. The feedback obtained will be used to refine the design into the final form and making a functional prototype. It will be tested anew under controlled conditions. This should be the end of the practical part of the work.

Martin Sombathy
is a first-year doctoral degree student at the Faculty of Architecture and Design, Slovak University of Technology with professor Veronika Kotradyová as his advisor. The topic of his dissertation project is age-friendly environment. Martin enjoys working on cross-disciplinary projects that connect social and technological innovation. His passion are materials, production methods and experimentation with both. He is fascinated by connection of traditional with the most modern and mutual symbiosis of these two worlds.

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Design in the process of preserving traditions

Tomáš Páriš

Keywords: regional identity, population ageing, intergenerational discussions, design, participatory design

The gradual loss of cultural identity is a common phenomenon in many regions of Slovakia. This process is taking place despite their rich cultural and natural heritage. Regional identity is not immutable and static. There are many influences that use its dynamic development (Kotradyová, Borysko, Lipková, Daniel, 2018, 9). Therefore, over time, acquire new forms.

The ageing of the population also has a fundamental impact on the development of the region's identity. Many traditions and crafts disappear over time (e.g. Ján Fotta, from Klenovec is the last one who masters a specific traditional weaving technique for

Illustration: Tomáš Páriš

making a “guba“ - wooly man’s coat or as a sheep’s wool blanket or rug). The reason is the frequent absence of passing down traditions from generation to generation and the lack of interest of the younger generation in folk culture. Seniors play a vital role in maintaining and passing on cultural heritage, as they have memories of the past socio-cultural environment. They can be an important source of information and knowledge for future generations. They thus form a significant part of society, which is the bearer of living cultural heritage and occupy an important place in the collective memory of the investigated areas (Kotradyová, Borysko, 2021).

In the process of creation of a designer, it is necessary to involve seniors in the process of creation and to create spaces for intergenerational discussions, which are the source of stories and references of past generations. They help us complete the image of the past for a better understanding of local identity and contribute to the positive direction of culture. In many cases, these meetings are an irreplaceable source of inspiration for the creation of new products (J. F. O. Morán et al., 2020, 177).

Illustration: Tomáš Páriš

For the purposes of the dissertation, the research will therefore focus on establishing closer contact with the local population and especially on creating functional cooperation between the craftsman and the designer. The designer's task is to be inspired by the material culture of the studied regions of Hont and Novohrad and to capture the specific design language of the location in the morphology, material composition and functionality of the newly created products. Thus, folk craft and traditions are preserved through the design of contemporary products, attractive for today's generation, which will eventually be launched on the market.

A key aspect of the work at the moment is also the establishment of a participatory design method. However, the population's participation in the creation process cannot be reduced to the form of material processing and production. Participatory design is a valuable tool in the field of design creation. It successfully involves stakeholders - designers, researchers, local residents and end users - in the design process to ensure that the final product meets all the needs of the consumer. (Elizarova, Dowd, 2017)

As part of this cooperation, we are able to revive the existing elements of folk culture into a contemporary, sustainable form in the form of products acceptable to society with the character of their local identity.

Tomáš Páriš
is a second-year doctoral student at the Institute of Interior and Exhibition Design at the Faculty of Architecture and Design of STU. The topic of his dissertation is Design in Regional Development under the supervision of Professor Veronika Kotradyová. The dissertation is a continuation and continuation of the research project APVV Identita SK - a joint platform of design, architecture and social sciences. The student participated in IDENTITY SK topics already in the fifth year of study at the FAD STU Institute of Design under the guidance of Mgr. art. Michala Lipková, ArtD. which resulted in the product OZI (hanger inspired by a harvesting tool).

In the work, the author examines the Hont and Novohrad regions by establishing cooperation with experts and the local population. The aim of the work is to find the possibilities of implementing design and creative processes in favor of preserving the folk culture of the region.

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