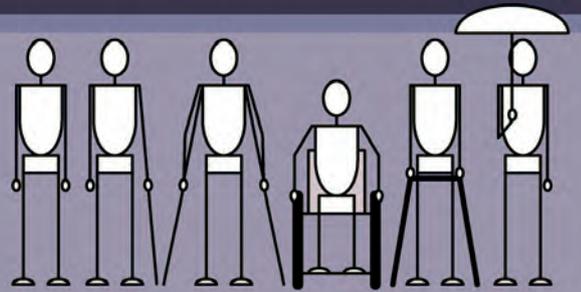


2013

ECA

European Concept for Accessibility



**Design for All in progress,
from theory to practice**

ECA 2013

This publication was produced with the financial support of
Info-Handicap – Conseil National des Personnes Handicapées (Luxembourg)

Impressum

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with the kind authorisation to use the
antropometric symbols from: “Diseño para todos:
Un conjunto de instrumentos”
© Francesc Aragall – Graphic design
by Beppe Benenti – Benenti Design
- © 2013** EuCAN – European Concept for
Accessibility Network
c/o Info-Handicap Luxembourg
- Internet** www.eca.lu
- ISBN** 978-2-919931-72-9
- Lay-out** Nathalie Gaudron

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FOREWORDS

Editors

When we are in touch with people, be it in a professional context or in our personal lives, it is inevitable that at some point the discussion turns to Design for All.

Most of the time, people are very enthusiastic about the importance of promoting the idea of an inclusive society, but when it comes to “translating enthusiasm into concrete action” we become aware that we are very far from a common understanding about the meaning of Design for All.

For the large majority of the people we meet, many of them campaigners with some kind of impairment, Design for All means that “disabled or older people need an accessible environment” to be able to participate in society and Design for All therefore means “accessibility for disabled or older people”. We must admit however, that a growing number of people believe that there is also a need to change the design of products and services.

Logically the discussion then turns towards the conditions which need to be put in place in order to implement Design for All. Here the promotion of ECA for administrations since 2008 has proved quite successful and we are pleasantly surprised to meet more and more people who know about the “Seven Interdependent Success Factors” – in theory! “In theory” because the remaining challenge is how to use the success factors in any given context.

It is for this reason that we decided to publish the following ECA document, which focuses on designers and advisors. Isn't it the designer's or advisor's task to describe his or her role and the difference that his or her involvement brings to a project?

Hence this publication aims both to help designers and advisors to check their understanding of the role they have to play when advising clients and also to help clients to check whether their advisors follow the principles of a Design for All approach.

When we prepared this publication and asked the members of the European Concept for Accessibility Network to describe how they approach Design for All, we were confirmed in our belief that there are “many ways to Rome” and that it would be impossible to provide “absolute values”, but we are convinced that what you will find in this publication comes very close to what you can expect from a good designer.



Francesc Aragall



Peter Neumann



Silvio Sagramola

Ministry of Family and Integration Luxembourg

'Emphasizing the importance of mainstreaming disability issues as an integral part of relevant strategies of sustainable development'

(Preamble of the Convention on the Rights of Persons with Disabilities)

No concept is valid unless it can be put into practise. This is certainly true for the notion of 'Design for All'.

Changing our surroundings and rendering them accessible to everyone is a challenge faced by anyone who aims to promote equality between citizens in modern society. This requires deep reflection on our architectural heritage. We are faced with a difficult task, which cannot be accomplished without consulting the individuals concerned. They have a lot of valuable knowledge and experience to share with us.

Over the past 20 years, a lot has been accomplished by both men and women in the field of accessibility. There are numerous examples of achievement in the private and public realms. However, experience has demonstrated that there still remain many obstacles. We must therefore persevere in our efforts in order to create a world in which no one feels excluded and everyone is able to fully benefit from his/her human rights.

This is the reason why I welcome and support the publication of this brochure and thank everyone who has contributed to its realisation.

Enjoy the read!

Marc SPAUTZ
Minister for Family Affairs and Integration
Grand Duchy of Luxembourg



EIDD – Design for All Europe

Europe's population is getting older and increasingly diverse: instead of celebrating these achievements, many see them as a harbinger of catastrophe. How will we pay pensions and manage with more of the population that cannot cope with our thoughtlessly thrown-together artificial environment and everything in it (products, services, communications, strategies...)? How will ethnic and cultural diversity dialogue with a continent of proud traditions?

Although the standard response to these and other challenges is retrenchment, cost-cutting and fear on the part of most private and public decision-makers, they can and must be a source of renewed impetus for a socio-economic system whose window of opportunity is rapidly being closed by an economic crisis that has hit Europe harder than anyone cares (dares) to admit and refuses to go away, despite all the prognostications from eminent economists, because their proposed solutions are actually contributory factors to its persistence: more of the same failed old recipes can only make things worse.

Yet there are brilliant alternatives to yesterday's failed models. A major one is Design for All, the focus of the steady work conducted for the last twenty years by EIDD – Design for All Europe and its members in (so far) 23 European countries.

Yet Design for All has focused its efforts on field work, facing up to myriad challenges, providing creative, innovative solutions and then rushing on to face the next challenge, often failing to write up its work so that others can reap the benefit. We have paid less attention to the words *scripta manent* than to getting the job done.

But a job well done also needs a documentary record: Design for All is a solution to today's socioeconomic woes of such effervescence that it richly deserves the fame, notoriety and emulation that can only come from widespread dissemination. This book and its authors make a valuable contribution to this determined effort.

Pete Kercher

Ambassador, EIDD – Design for All Europe



Federal Minister of Transport, Building and Urban Development of Germany

The greatest possible degree of mobility and maximum freedom of movement – in the immediate living environment as well as in the public realm – are major requirements of our time. Social inclusion and a lively togetherness in our society are hard to imagine if these requirements are not met. Today, these issues are attracting more and more attention, in particular with a view to demographic change, and political decisions concerning people with impaired mobility are judged against the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD).

In order to implement this Convention, the Federal Government has developed an action plan which is constantly being updated.

A sustainable building, housing and urban development policy is of considerable importance in this context. In the interests of a “Design for All”, we need, for example, significantly more age-appropriate and fully or partially accessible accommodation. For one thing is clear: each and everyone should be able to continue living in a familiar environment and in their own home as long as possible. It is therefore paramount that, unlike in the past, accommodation and living space – through individual farsighted thinking as well as a long-term demography strategy – be designed accordingly as a matter of course.

Meeting the planning, design and structural criteria requirements of a “Design for All” in practice undoubtedly requires a high level of technical expertise. Consolidating competencies is therefore of valuable assistance: the industry, the crafts sector, academia, authorities and government must join forces and act in concert. This brochure published by the European Concept for Accessibility Network provides reliable guidance.

My special thanks go to all those involved for their commitment. I hope that this brochure will be actively used and provide all readers with valuable insight, and I wish your network every success in the future.

Dr Peter Ramsauer
Member of the German Bundestag
Federal Minister of Transport, Building and Urban Development of Germany
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There is a general agreement that the built environment, transport systems, information and communication tools, products and services – in short everyday life has to be designed in a way that allows for the maximum number of people to participate in society. Nobody should be excluded or discriminated against because of a lack of professionalism, creativity or good will from providers and severe sanctions must be imposed whenever and however deliberate exclusion or discrimination takes place.

However, as pointed out in the “Build-for-All” project¹, it is obvious that “Good intentions are not enough” and very often the reason for bad solutions in the implementation of accessibility for all is a lack of knowledge. Other reasons can be found in limited resources, varying priorities, multi-annual planning, or others that may oblige decision makers to choose between a range of possibilities.

On the other hand, applying accessibility in the sense of the Design for All approach to new projects is certainly easier than adapting, modifying or renovating what already exists. Redesigning existing infrastructure, services or other facilities meant for public use is a challenge that calls for intensive exchange, negotiation and planning (for example by including renovation in the normal maintenance schedule).

The term Design for All and many other terms meaning similar approaches are being increasingly used by all kinds of actors, but unfortunately there is huge scope for individual interpretation of what these approaches really mean in terms of correct implementation.

Nevertheless, this publication will NOT focus on definitions, and Design for All will be the only term used throughout. This publication aims exclusively at providing practical advice on the successful implementation of Design for All in both public and private sectors.

This publication will try to explore:

- how advisors can respond correctly to the expectations of clients (public administrations as well as private enterprises) looking for Design for All solutions,
- how such clients can find out whether their advisor is following a valid Design for All approach.

Over the last ten years many publications and projects (Fig. 1) have explained why the Design for All approach cannot any longer be linked to single groups of the population and, that Design for All, indisputably concerns each and every one of us.

Nowadays, the term Design for All appears widely but unfortunately not every strategy that calls itself Design for All respects the rules for its correct implementation and there is still a need for pointing out those elements that make the difference between “advice” and “Design for All advice”.

1. European Pilot project on actions to mainstream disability policies submitted under the open call for proposals for transnational projects VP/2004/008, see *The Build for All partners 2007*.

- 
- November 2003: Launch of the ECA 2003
 - March 2004: EC adopted Directive 2004/17/EC and 2004/18/EC (DfA in public procurement)
 - May 2004: EIDD published its Stockholm Declaration on Design for All
 - September 2008: Launch of the ECA for Administration
 - 2009 CoE: Recommendation on achieving full participation through Universal Design
 - February 2010: Design for All Foundation established the international Design for All Foundation Awards
 - December 2010: UN Convention on the Rights of Persons with Disabilities formally confirmed by the EC
 - December 2010: EC established the European Access City Award
 - August 2012: ZVSHK established the international "Bathroom Design for All" Product Award
 - November 2013: Launch of the ECA 2013

Figure 1: A selection of key European milestones in the development of Design for All since 2003

Design for All prerequisites at a glance

- Advice on Design for All must be based on real **Design for All thinking** – having in mind a global approach and not just a one-dimensional solution to one particular problem. Therefore Design for All advice must be based on teamwork, user orientation and on a working method designed to avoid mistakes and loss of opportunities (chapter 2.0)
- The implementation of Design for All calls for **skilled advisors** (chapter 3.0)
- The whole Design for All process should follow a clear and transparent line based on **success factors** (chapter 4.0)
- The Design for All solutions should be controllable through a well-defined **success evaluation** (chapter 5.0)
- The expectations of society evolve at the same time as concepts and technologies advance and a good Design for All implementation allows for **adaptations towards next steps**.

2

DESIGN FOR ALL IN PRACTICE - How to become successful

2.1 Design for All Thinking

Very often clients asking for advice towards the implementation of Design for All are not aware that the success of new actions or achievements depends on the connection or connectivity of such actions with other existing or new initiatives. We refer here to the idea of the “service chain” based on the idea of avoiding “isolated” accessibility solutions and on a holistic way of thinking.

Other problems may result from designing initiatives in a way that takes certain target groups into consideration, whereas other groups of potential beneficiaries are forgotten or even disadvantaged.

The worst scenario would be an initiative taken with the best intentions ending up with accusations of direct or indirect discrimination.

It is a reality that missing resources may necessitate restricted choices or limited priorities. However such limitations or priorities should not impact on future adaptations. The identification of the priorities should be based on user-centred design and identifying priorities with all the stakeholders involved in order to make sure that the most urgent demands are covered.

Unexpected situations may arise which force a change to the original plans. In such cases the work that has been done should at least leave scope for correct implementation of the initial ideas at a later stage.

2.2 Challenges

Any Design for All project, product or service is developed by starting from a challenge or concrete need. Transforming this impulse into a solution that can successfully satisfy the real need requires an appropriate design process. The “waterfall model” (figure 2) is a useful way of describing this kind of a Design for All process.

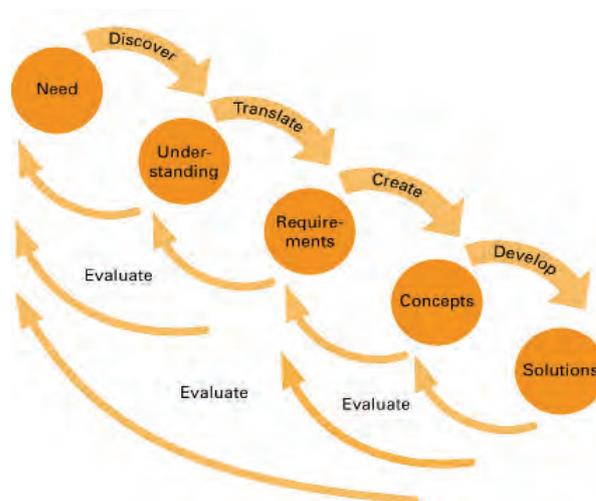


Illustration: A Design for All process (“waterfall model”) (Knigge ref. to Clarkson et al., 2007)

If at all possible, all stakeholders (experts as well as end users) should be involved in all stages of the design process – starting with the discovery and translation phase (discovering user needs, generating ideas, identifying opportunities and requirements, etc.), up to the creation and development phase (defining concepts, developing solutions, market introduction, etc.).

Such involvement should not consider users just as passive actors to validate the project, but should encourage them to bring in their own experience and creativity.

A promising Design for All approach is always built on solid partnerships between the advisor's team, all the stakeholders and a well-balanced representation of all those who will benefit, exert influence on or be influenced by the project. The aim of this approach is to create a cooperative development process in which all partners feel engaged as co-owners of the solutions agreed.

The choice of stakeholders to get involved can be a tricky question especially when one group is too dominant or one important key player is missing. This usually happens when the design process is not holistic enough and does not include the necessary consultation i.e. with the people that should install it or maintain it. It is also usual to forget user groups which might be disadvantaged by the solution delivered (like for example pedestrians versus cyclists).

Once a collaborative community has been successfully set up and consolidated, with luck, it may happen that proposals for new issues to deal with or new members to invite are developed within the group. A good Design for All advisor will not hesitate to promote these kinds of dynamics as sources of improvement and inspiration that can positively influence innovation processes.

2.3 Risks

Solutions that are not based on the Design for All approach, risk ending up in not really being effective and so needing further adaptations. This will not only have a negative influence on the appreciation of the competence of the advisor and the decision maker, but it will in the end be more expensive and less attractive for the client.

The end users will not benefit from ineffective solutions and they will certainly complain about the poor quality.

The increasing importance of legal instruments against discrimination on the other hand, will create the risk of sanctions and punishments and Human Rights organisations will exercise their right to bring cases to Court. Second only to the financial implications of such situations, the loss of reputation will be a considerable threat.

2.4 Areas to consider

It would be a mistake to believe that Design for All is limited to certain sectors only (see Neumann et al. 2013). As pointed out in chapter 2.1, the challenge is to adopt Design for All “thinking” and this means, that Design for All affects all areas like General Administration, Planning, Marketing, Communication, Finances, Production, services delivery, customer relations, etc. (see chapter 4 on Success Factors).

2.5 The need for a good advisor

In order to develop or run a Design for All Project, the client can make decisions himself or acquire external advice. Hiring an appropriate advisor provides the client with expertise and resources with which to approach a successful project. This coaching and support can help to optimize opportunities.

Investing in good advisors can help to avoid costly mistakes, manage risks, save time, and improve overall investment results. Furthermore, a good advisor provides guidance, reassurance and support to help reaching long-term goals.

3 GOOD ADVICE MATTERS - How to identify an appropriate advisor

Choosing a good advisor is a crucial aspect of planning a Design for All project. Hiring an advisor that is not well-suited to the challenges of Design for All and the needs of a client is a risk that should be avoided through sound research.

There are some Key Factors to look at before entering into a business relationship with an advisor (see Murray 2012):

1) Competent and trustable

A good advisor must be someone you trust to do what needs to be done. She or he must also be trusted in the field of Design for All and must want the client to succeed. In addition, a good advisor has – ideally – many years of experience in handling different Design for All projects and is willing to invest in staying up to date. He or she should be able to produce references of his work.

2) Effective

A good advisor should be well-versed in Design for All policy and practice in order to be able to provide the client with effective, accurate and usable information. A good advisor views long-range planning as well as immediate problem-solving as an essential part of effective advising.

She or he tries to be compliant with the dead-lines and long-term goals.

3) Positive and emphatic

A good advisor should be skilled at generating enthusiasm and personally and professionally interested in being an advisor. She or he should listen attentively, attempting to understand all aspects of the client's expressed problems.

An appropriate advisor should also follow the principles of ethically acceptable behaviour.

4) Transparent

A good advisor should explain his working methods and the related costs in a responsible way and should outline own competence.

A good advisor should also be aware of the resources that the client is willing to devote to the project. Even if there is in general a positive attitude towards the implementation of Design for All, a lack of knowledge and the low visibility of good practice in this field can make the clients reluctant to engage. The increasing social pressure and legislative constraints towards non-discrimination support the implementation of Design for All, but many clients still feel uncomfortable when they have to contract advisors. This feeling may even be enforced when professionals lacking Design for All knowledge underpin the mistrust toward advisors in Design for All.

5) Well skilled

A good advisor should understand the framework and evolution process of the client and his or her aims. The advisor has the responsibility to make sure that the Design for All process takes the broadest possible scope and covers a maximum of user needs. He also has responsibility for advising the client to invest the available resources in the most satisfactory way. Independent from the amount of available resources, the result should always end up with a win-win situation both for the beneficiaries of a particular initiative and for the advisor's client.

An appropriate advisor should know about relevant laws, directives, norms, etc. as well as about the potential partners and all the stakeholders affected by the Design for All project.

6) Cooperative and well-connected

A good advisor also needs in-depth knowledge of the effect of interactions and processes that will take place and must be able to use the appropriate instruments and networks in a creative and productive way.

The Design for All process is based on dynamic cooperation and on teamwork and a good advisor will not hesitate to ask for assistance in order to secure the best possible implementation of this process. Such assistance may be available inside or outside the working context and the advisor will not hesitate to network in order to provide good solutions.

**"If you think it's expensive to hire
a professional to do the job,
wait until you hire an amateur."
*(Red Adair)***

4 SUCCESS FACTORS - What a good advisor must provide you with

It has to be acknowledged nowadays that isolated actions to support or develop a Design for All process are not efficient. Success ultimately depends on the professionalism and the coherence of activities and on the definition of common factors that provide maximum potential for the best possible implementation of initiatives.

A good advisor should be aware of those Success Factors to support a Design for All project and should be able to coach the client to design and run a concept action plan based on them.

As already identified within the “ECA for Administrations”¹ seven interdependent Success Factors can be defined:

1. Commitment of the Decision-Makers
2. Coordinating and continuity
3. Networking and participation
4. Strategic planning
5. Knowledge management and qualification
6. Optimisation of resources
7. Communication and marketing

Because of their essential role, not only for new but also for existing and current Design for All projects, it is important for a good advisor to acquire and to communicate a thorough understanding of each of these seven Success Factors, as follows:

4.1 Commitment of the Decision-Makers

Despite the diversity of social, economic or political systems, the implementation of any Design for All process generally stands a greater chance of success when it is of general interest.

In most European countries, politicians, heads of administrations or senior managers cannot take the risk of leading projects that do not meet a concrete need. This need may be dictated through financial, socio-cultural or ecological arguments and it is then a question of the decision makers' experience and skills when it comes to seeing how the need will be translated into action.

1. Aragall, F./ Neumann, P. & S. Sagramola (2008): ECA for Administrations. Luxembourg

Responsibility for the quality of Design for All process is shared by stakeholders and decision-makers at any level that has an impact on the development, implementation and monitoring of policies and strategies. This means that the higher the position occupied by “decision-maker commitment” in the management structure, the greater are the chances for the other Success Factors to have an effective impact. Conversely, if it occupies a low position, the greater is the risk of not being able to guarantee the sustainability of actions.

4.2 Coordinating and continuity

Managements of businesses or municipalities mostly commit to the creation of Design for All by appointing a committed person (“caretaker”) doing her or his job among other tasks. In the medium- and long term, structures have to be developed that can work without being dependent on these committed individuals. To ensure the sustainability of the development process and to work on it professionally, it is useful to assign a dedicated work unit or coordinator with appropriate (financial) resources within the management.

The coordinator’s role mainly consists - on an on-going basis - of setting up and maintaining network communication, following up strategies and actions defined within the Design for All process plan and storing and circulating knowledge accumulated and produced during the process.

The higher the position of the coordinator, the greater the impacts of internal and external communication. Nevertheless, the coordinator has to ensure the continuity of the Design for All process so that no momentum is lost over the years. The coordinator’s mission should not suffer from decreasing stakeholder commitment or loss of all the efforts and resources allocated along the way.

4.3 Networking and participation

Any concerned stakeholders should be invited to participate in the Design for All process from the outset. Indeed, in some cases, if one of them was absent, it would be preferable to suspend the process until their involvement can be guaranteed. In order to identify which stakeholders should be invited diversity and inclusiveness have to be ensured.

Stakeholders could for example be end users of the built environment (staff members, external visitors), as well as people responsible for maintenance, legal requirements and (public or private) funding sources (e.g. politicians, employees, volunteers), and other experts providing input for certain areas (e.g. architects, engineers, consultants, planners, craftsmen, therapists, etc.).

For practical reasons, and because of the diversity of possible actors (managers, politicians, employees, volunteers and external experts), it can be more effective to set up different (sub-) networks.

The coordinator (see chapter 4.2) should guarantee efficient cooperation within the network(s) based on clear rules for participation. The principle of consensus would have to be a key issue in guaranteeing both success of the Design for All project and recognition of the results achieved.

The usual mistake in networking is to call for participation too late in the process with the sole purpose of confirming the way ahead for the projects.

Stakeholders, especially the end users should be involved in the project from the very beginning giving them the opportunity of co-creating the project with us.

The richness of the project contents and the final results depend very much on this.

4.4 Strategic planning

Next, a strategic concept action plan should be drawn up – including all strategies, resources, time-lines (short, medium, long-term), coordination and concrete actions to be carried out, with well-defined milestones to facilitate follow up. It should be as detailed and accurate as possible and must be evaluated at the end of the process.

However a strategic action plan should not be rigid. It should allow flexibility in order to ensure that all stakeholders actively participate in the process. From the initial broad goals to detailed actions, all elements of the plan must be subject to negotiation with the aim of achieving consensus at every step.

On the other hand, any progress made, or knowledge acquired about the topic and changing circumstances or opportunities are likely to bring about the need for a change in strategies, a rescheduling of actions, and a reallocation of resources.

To ensure the success of the Design for All process and all actions constant evaluation and updating of the strategic plan is necessary (see chapter 5).

4.5 Knowledge management and qualification

Good knowledge management should guarantee – on a regular basis – the transfer of acquired know-how in an efficient, considerate and open way. Knowledge acquired at management level may need supplementing with information about similar cases faced by other administrations or businesses and with the experience of external experts in order to avoid “reinventing the wheel”. Participation in national or international networks dealing with a given subject is therefore another good opportunity for sharing knowledge and experience. Throughout the working process, all stakeholders should be able to acquire a solid common knowledge base.

Finally, all stakeholders involved in a Design for All process should invest in staying up to date through continuing professional development and through attending relevant conferences.

4.6 Optimisation of resources

The project management has to provide and allocate the resources required to complete all phases of the Design for All process. These resources may be financial, human or technical.

Sometimes it is the availability of resources or the possibility of obtaining financial support that triggers the launch of a project and, although unexpected resources are always welcome, the continuity of the project must be guaranteed from the outset, so that it is not jeopardised should these funds dry up unexpectedly at some stage.

Sometimes it is not funding but a creative (re)allocation of human and/or economic resources, or just taking advantage of opportunities, that permits concrete achievements along the way.

4.7 Communication and marketing

Generally the results of the Design for All project as well as the process itself will be communicated and sold within and beyond the decision maker's circle (internal and external communication). Within this process the reputation of the client and the stakeholders involved can also be increased. A good advisor should have knowledge about this process and its elements.

A critical part of the Design for All process is identifying and selecting the appropriate target group or market in which customers share similar needs and user behaviour. Although we talk about Design for All, it would be a mistake in targeting a product or service to try to reach everybody and ending up appealing to nobody.

Generally target markets are groups of individuals that can be identified by distinguishable and apparent aspects, like geographic segmentations (location, climate region, etc.) or demographic/ socio-economic segmentation (gender, age, income, etc.). In addition to this kind of segmentation, market researchers have advocated a needs-based market segmentation approach to identify smaller and better defined target groups.

It's important to know how to consider all these aspects within the target groups in order to include them while defining the brief of the Design for All project. In addition it is important also to know about some prejudices and misconceptions ("killer-arguments") about the concept of Design for All and its approach, such as:

- *"Users' involvement takes too long and is too expensive."*
- *"We are already dealing with this and we know everything about it."*
- *"The local disabled people's NGOs are already advising us about this."*
- *"These population segments (can be older people, children, disabled people, immigrants, etc.) are very small here."*
- *"We don't have the money to do this kind of thing."*
- *"We have never been asked to do such a thing."*

The advisor or the project leader should be able to provide answers to these questions.

5 SUCCESS EVALUATION¹ - What a good advisor has to take care of

A good advisor should not only be aware of the existence of Success Factors (Chapter 4) but also of the effective and on-going success evaluation within a Design for All project.

Any project should be based on very clear aims and objectives. In order to be able to evaluate upcoming results and in order to prevent the process going backwards or evolving into damaging compromises, a good advisor should make sure that objective as well as subjective success indicators are defined at the beginning of the project. Nevertheless, the social context, contextual aspects like general economic constraints, environmental concerns, political campaigns or any other unexpected facts may also influence the results.

The typical indicators for companies are sales increase and profit but they can be complemented by other indicators focused on Social Corporate Responsibility, publicity or reputation, among others.

Indicators for public administrations should be public interest and – increasingly – social acceptability. The efficiency of projects should be measured with a view to the responsiveness to the citizens' needs and the rules of social cohesion.

5.1 Indicators for success evaluation

Economic impact

The Return on Investment (ROI) is a frequently used index to evaluate economic performance consisting of dividing the profit by investment (can be also multiplied x 100 to obtain a percentage).

In private companies the sales growth is an easy and cheap index to measure. It is very immediate and can have almost instantaneous values, which allows it also to have quick reactions. However, a sales growth that does not go together with a margin growth could be very dangerous. Consequently, it is important also to watch out for this datum.

Participation in the market could be difficult to measure in those sectors where there are no market research agencies based on panels of consumers or panels of distributors. However, the importance of this datum, even if it is not accurate or subjective, is relevant: in order to truly grow, the increase in sales must be above the market growth; otherwise participation and, in the long run, competitiveness are being lost.

1. See Aragall, F. & J. Montana 2012.

Growth of a specific group of clients	<p>If a project was intended to increase the attractiveness of particular services to the older segment of the population one may measure if this group of clients have effectively increased.</p> <p>It has to be borne in mind that in certain cases the group to be measured is not easily accountable. As example: When increasing the accessibility of a building it would be a mistake only to count the number of wheelchair users as many other people will benefit and not all mobility limitations are visible.</p>
Growth in the number of regular customers	<p>Loyalty of the clients is a good indicator when offering something where repetition is involved.</p> <p>The possibility of measuring the number of new clients joining because of recommendations from previous clients is also a good indicator.</p>
Growth in the indices of satisfaction	<p>Surveys organised with the aim of analysing the level of consumer or user satisfaction can open the way for improvement.</p>
Decrease in numbers of claims	<p>Decrease in numbers of claims can indicate an increase in the quality delivered and it is always advisable to analyse claims as they are an excellent tool for improvement.</p>
Increase of the success of new products marketed	<p>If a company is regularly launching new products into the market, the comparison of the latest products with the previous ones can provide relevant data.</p>
Creation of new lines of business	<p>There are some examples of companies which, after involving users in the design process and engaging in dialogue with them have discovered new business opportunities.</p>
New services linked to existing products	<p>It is also possible that active listening to consumers enables the company to discover additional services that can be offered.</p>

5.2 Tools to analyse subjective and intangible data

<p>Coverage in the press (press cuttings)</p>	<p>It is advisable to compare the profile in the press before and after launching a product or service. But check also how positive these news items are.</p>
<p>Increase of organisation's profile</p>	<p>That is, the percentage of people that learn about the organisation spontaneously or because of a suggestion.</p>
<p>Image in social media</p>	<p>Social media is a very influential means to create public opinion. To read about oneself but also being active in using them can provide invaluable data about one's own image.</p>
<p>Brand image and corporate reputation</p>	<p>This is especially relevant for big organisations both public and private. This information is usually collected through surveys and provides information about the public image. Everybody may recall companies or politicians still suffering from a bad reputation although the problems they created are long past.</p>
<p>Increase in collaboration proposals</p>	<p>If projects are succeeding it is very likely that more organisations will suggest carrying out activities together.</p>
<p>Improvement of work climate</p>	<p>If the projects of an organisation are successful and meaningful it will positively affect the atmosphere of the working environment</p>
<p>More involvement of providers</p>	<p>In the same way engaging one's own providers in a project development will make them more collaborative.</p> <p>Another aspect to be considered is the contribution to social progress. This cannot be accounted for with figures although it is clear that reducing social exclusion, promoting equality and respecting diversity are values that can make a very positive contribution.</p>

On the following pages a series of articles from designers, consultants or advisors who are active in different fields, provide an overview of products and services based on a Design for All approach.

The range of possibilities for the implementation of Design for All varies from holistic accessibility plans for cities, through general products and services to very specific solutions or assistive technologies.

There will always be space for improvement and, as people's expectations constantly evolve, Design for All has to be considered as a never ending process, where the only limits to creativity and ingenuity are the lack of concerted action and of knowledge.

6.1 City of Paderborn Accessibility Strategy

The historical city of Paderborn (ca. 150,000 inhabitants ¹) in North Rhine-Westphalia, Germany, has developed a strategic integrated action plan for its city centre. Among others (retail, transport, tourism, leisure, housing, etc.) specific measures are included in the plan to develop accessibility, through the redesign of paths and routes connecting public spaces, private locations, historical landmarks and parks. The aim is to establish Paderborn as a citizen- and tourist-friendly city.

The public construction authority of the city contracted the consultancy NeumannConsult (www.neumann-consult.com) as an external advisor to develop a strategic action plan for the accessibility of the city centre.

For the city of Paderborn, the following stages of analysis have been followed by the advisor to fulfil the remit:

- development of a survey form, derived from relevant norms, regulations and the long standing practical experiences of the external advisor
- access audits on site, according to the survey form
- photographic documentation
- city-tours with different stakeholders, recruited through advertisements in newspapers and through consumer associations
- expert and stakeholders interviews
- meetings with civil servants and public authorities involved

1. See www.paderborn.de



Photo: City-tour with different stakeholders in the city of Paderborn (© NeumannConsult 2012)

After that, the data collected during the analysis phase has been evaluated and the findings have been collated into a list of barriers with 3 levels of difficulty and 3 levels of prioritisation. The results have been presented and explained to a number of civil servants and the city council. Feedback has been collected in order to promote a dialogue among them for the successful implementation of accessibility in city planning and development. In this way the project has generated an on-going process of implementation of the accessibility survey results.

Thanks to the strategic action plan including action recommendations and practical guidelines, it is possible for the public authorities to prioritise the tasks according to available economic resources so that they can optimise results.

Moreover, the commitment and future engagement of the city, enables discussion to take place about new ideas for other projects, mainly in the field of marketing and communication of the present project findings.

Authors:

Sonia Carpinelli (NeumannConsult) and
Eckhard Döring (City of Paderborn)

6.2 City of Novi Sad Accessibility Strategy for 2012-2018

Since 2007 the 'Centre Living Upright' has been lobbying the local authorities of the City of Novi Sad in order to initiate the process of creating an accessible environment. The organisation insisted on the need to address this issue in a multidisciplinary, holistic and systematic way, using the concept of Design for All, and providing 7 Interdependent Success Factors (ISF – in accordance with the EuCAN recommendations).

At the end of 2010, the local Accessibility Team was created and its Coordinator was elected by the Decision of the City Mayor, with the task of drafting the local Accessibility Strategy. The members of the team were selected following recommendations by the City Council, local public companies, the city administrations, and civil society organisations, based upon their competence and ability to contribute to problem solving.

Once the Accessibility Team was created, the representatives of the Centre Living Upright carried out a series of training sessions for all team members, including close collaborators and decision makers. The basic goal was to equalize the differences in the levels of knowledge and awareness about accessibility and Design for All.



Photo: Press conference with the Mayor on the occasion of completion of the Strategy paper (© Počuĉ, 2012)



Photo: Local Accessibility Team meeting (© Počuĉ, 2012)

During the strategy drafting process, the Team organised a number of training sessions and meetings with the citizens, where three focus groups were created, addressing each the three most important strategy topics: 1. Public space and public transport; 2. Facilities intended for public use; and 3. Information and communication. The horizontal topic which was addressed by all the groups was: Access to/accessibility of services.

In group work, all the issues were identified and analysed from the perspective of accessibility, by using SWOT analysis, after which the strategic orientation and goals were defined and developed.

In this phase, all the stakeholders, including interested institutions, organisations and citizens from the Novi Sad area were given the opportunity to participate in the process. Thus, the work was successfully publicised, and widespread participation in the drafting process was achieved. In addition, consensus was reached among the general public on the issues identified and the objectives proposed in the plan.

Key strategic goals:

- To enable independent and free use of all public space and of public transport for ALL citizens, regardless of their physical capacities, sensory or intellectual characteristics or age;
- To provide all citizens, regardless of their physical capacities, sensory or intellectual characteristics or age, with equal opportunities to use all public facilities in the City of Novi Sad under equal conditions;
- To enable equal access to public information, communication and services for all citizens, without discrimination based on their capacities or knowledge.

These general strategic goals have been further elaborated into strategic objectives, tasks and activities. Furthermore, adequate resources were secured, as well as methods and techniques to monitor and evaluate the success of the implementation of the strategy.

Once the draft Accessibility Strategy was completed, citizens and public in general were given the opportunity to view the text of the strategy before its official adoption by the City Assembly.

The Accessibility Strategy was officially adopted by the Assembly of the City of Novi Sad on 30 March, 2012, and it covers a period of 7 years (from 2012 to 2018).

Bearing in mind the goals defined, the implementation of the Strategy today represents a challenge for the City, as well as a chance to make an impact on the 'cause' of the problems and make a lasting change in the area of accessibility.

Author:
Miodrag Počuč

6.3 The Danube Park

By adopting the Accessibility Strategy 2012-2018 the Assembly of the City of Novi Sad has taken the decision to continue its activities to create an accessible environment. Among other things, the Strategy paper foresees that during reconstruction works of the existing public space in the City accessibility must be provided for all potential users of that space. Given that a significant part of the technical documentation was finalised in a previous phase (before the Strategy was adopted), this requires preliminary control of those projects and their modification in order to prevent creating new barriers in public space.

In mid-2012 the local public enterprise for City Construction and Development which is in charge of most City investments, carried out the reconstruction of the Danube Park, in the city centre. The representative of the Institute for the Protection of Cultural Monuments, since the Park is protected, was in charge of issuing permits to start the works. However, before issuing the permits, they wanted to make sure that the proposed project, in addition to all the other criteria, provided an adequate level of accessibility for all citizens, in accordance with the recently adopted Accessibility Strategy. They contacted the Local Accessibility Team for advice.



Photos: Before: Initial look of the entrance to the Danube Park (© Rudić Počuč, 2012.)

Having reviewed the technical documentation prepared previously for the reconstruction of the Danube Park, The City of Novi Sad Accessibility Team members noticed that the proposed solution was inadequate, that some standards were not respected and the accessibility and Design for All criteria were not satisfied. If such a project were to have been implemented there would have been a serious risk of subsequent complaints, or even citizen lawsuits. It is also quite probable that a new reconstruction would have been necessary, which would have required additional funding.

Bearing all that in mind and in order to ensure greater accessibility of the Danube Park, instead of carrying out the planned works, the enterprise for City Construction and Development was asked to modify the existing project documentation, taking into account the needs of all the citizens.



Photo: Reconstruction works on the entrance to the Danube Park (© Rudić Počuĉ, 2012)



Photo: After: the entrance to the Danube Park today (© Rudić Počuĉ, 2012)

After modifying the project documentation and receiving the necessary permits, field implementation was initiated. A new path was built that joins the park in a gradual slope, using appropriate materials, with handrails and lighting.

The reconstruction of the entrance to the park is a positive example of use of the City Accessibility Strategy and modification of a project paper that had already been completed, and which was influenced in the correct way. Some City structures recognised the problem and they were aware of the people to contact. The solution was found thanks to the cooperation of a number of public enterprises with the Accessibility Team.

However, the review of all on-going projects and possible modifications to those that are not in accordance with the Design for All criteria still represent a challenge for the City since there is still no clear and efficient model for their control.

Author:
Bojana Rudic Počuĉ

6.4 Design for all process



Photo: The NAC-building is not only sustainable both by means of low energy consumption, and also in its usefulness to all. (© Philippe Van Gelooven, 2013)

Technical data:

Project: New Administrative Centre (NAC) for the municipality services, social services, library, police department, district court, arts & music academy, Red Cross service and a bistro. The NAC building is considered to be the most sustainable administrative building in Flanders.

Location: Belgium, 3530 Houthalen-Helchteren (reconversion of old mine site).

Design & Construction team: Holistic Architecture 5015, Arcadis, Cordeel, Creando and Kumpen.

Accessibility Consultancy: Toegankelijkheidsbureau vzw (TGB), Kermt – Belgium.

The TGB was asked by the municipality to join the construction team in the preliminary phase. The municipality also gave an official mandate to one representative of “the council of users” to follow up the building project. For the TGB 3 accessibility specialists were involved: a mobility expert, an architect and a product designer.

Plans were discussed several times with the designer(s), the representative of the community and, very important, the project leader during the building phase. The process of holding several meetings with all the different stakeholders was one of the key factors for success. Because a preliminary design was already available the designers were afraid that the concept and design of their architecture was going to be influenced in a negative way by the accessibility consultants - one of the challenges for the accessibility consultants therefore was how to respond to the architecture.

For example: how can we make the door to the toilets visible (especially for people with visual impairment) while the designer wants a door that is almost invisible?

Simply by putting only a red door handle on a wider wooden strip in combination with stylish signage.



Photo: A few simple additions make this door more visible and recognizable as the entrance to the toilets in an aesthetic way. (© TGB, 2013)



Photo: The stairs are equipped with double continuous handrails and adequate lighting. Contrasting colours and tactile markings focus attention on the steps. (© TGB, 2013)

Because of the holistic approach, the designers' improvements were quite easy to integrate. Through the process the architects learned that DFA is also a part of the holistic approach and must be integrated in the concept phase.

Before and during the building phase all the finishing details were discussed, all technical specifications for accessibility on subjects (such as lifts, handrails, ...) had to be approved by the TGB before being agreed. Several meetings on location with the project leader and contractor took place to make adjustments in time if necessary (for instance the correct placement of handrails was discussed with the sanitary contractor).

The Delivery phase: a final inspection with the council of users and project leader from the building phase took place. A proposal for several small adjustments has been approved by the municipality and the necessary adjustments will follow. Despite thorough guidance throughout the design and build process it remains very difficult to secure the DFA philosophy.

For example: during the building phase the technical room on the roof suddenly became a tourist lookout point but the lifts didn't reach the roof. Therefore the view from the lookout point was transferred by a webcam to a big screen on a lower accessible floor.

Design for all features – a few examples

Accessibility for the public & employees - According to the accessibility law in Belgium only public spaces have to be accessible. In this building people with impairments can also easily be employed.

Accessible toilets - Accessible toilets are integrated in all the ladies rooms as well in the men's rooms. In some cases only accessible toilets are available and are used by everyone.

Circulation - All main entrance doors slide open automatically. Internal doors in circulation routes can be operated automatically by pushing a button. Lifts have larger dimensions than legally required so turning 360° in the lift is easy. Stairs are provided with handrails on both sides and a second lower set of handrails is also available.

Safety & evacuation - All staircases have evacuation chairs to evacuate persons with reduced mobility. Training on the use of these chairs is given during fire drills.

Counters, service desks and meeting rooms - All counters and service desks are designed so that they can be accessed and used – on both staff and customer sides. Every counter has an induction loop.

Acoustics - Special attention went into the acoustics of the whole building. The entrance hall is a large double height open space but when entering the entrance hall sounds are muted.

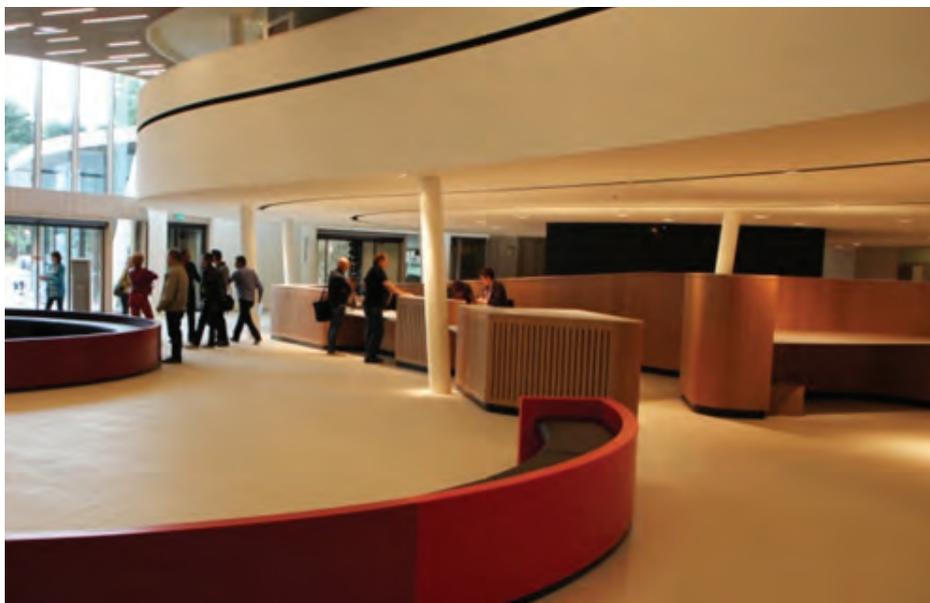


Photo: The lobby is spacious but the materials selected, with careful attention to acoustics and usability for all give the space a living room feeling: everyone is welcome. (© TGB,2013)

Authors:

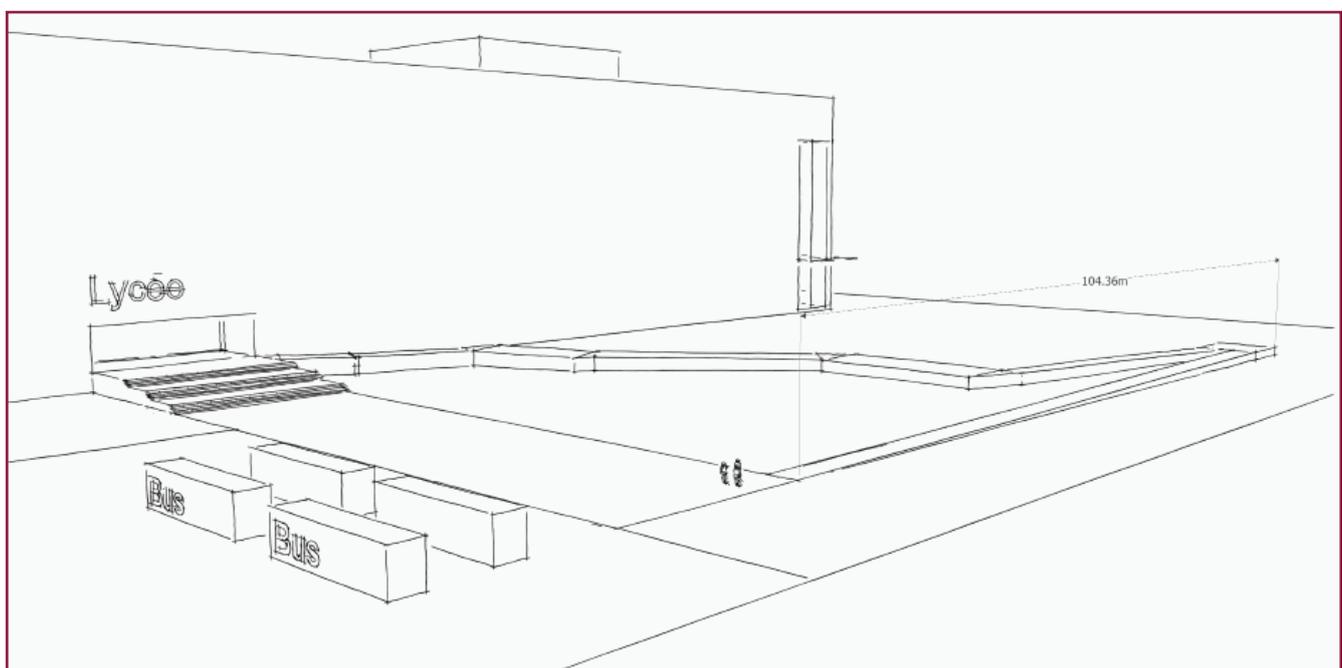
Caroline Delveaux & Marcel Wijnker Office for accessibility
(Toegankelijkheidsbureau vzw)

6.5 The advisor needs to be involved at the early stages of a project

This is a well-known situation where the design for all advisor is involved too late in a building project and his mission is to evaluate the project in terms of accessibility before the final release.

The problems are many:

- The advisor isn't part of the initial team, he is perceived as an external controller or supervisor. This situation gives him from the start a negative role. This requires even more tact when highlighting problems in the existing design.
- Much work has been invested to reach the current stage of the project. No major modifications are going to be accepted even if the errors are obvious. Fine excuses are simple and difficult to counter; radical modifications can't be undertaken for financial and timing reasons!
- Design for all has been taken into account, but the lack of real competence in this domain has led to solutions that are legally correct but discriminatory and difficult to use in day-to-day situations.
- The modifications accepted which are of necessity compromise solutions, don't integrate well into the global design and don't suit the needs of all users. This leads in the end to a frustrated partner.



Picture: The ten times longer walkway to be used by disabled students. (Adaph, 2007)

Case study: A school

The students arrive by bus. They only need to walk 25m to the school entrance. The project leaders proudly explain that they have managed to include a nice walkway with only 1% rise for wheelchair users to avoid the fifteen steps at the entrance to the building. The design for all advisor has a hard time explaining that it is not fair that the disabled student has to walk or wheel nearly 250m to enter the school in all weather conditions, rain or snow.

This last argument convinced the project leaders to add a costly lift at the entrance of the school.

Author:
France Rolland

6.6 Design for All Approach in the development of Portuguese Municipal Integrated Accessibility Solutions Plans

ProAsolutions.pt – Lda has extensive experience as an advisor on the development of a Design for All approach to develop “Municipal Integrated Accessibility Solutions Plans (MIASP)”. So we present the latest developments in Portugal from the “chapter 4 Success Factors – What a good advisor have to provide you with” point of view.

Thanks to Design for All advice there was a change of mentality in Portuguese Municipal Decision-Makers regarding the approach to the development of MIASP since they should not be limited to the elimination of architectural barriers for people with physical disabilities, but they should prepare municipalities to become accessible for all, taking into account human diversity and their different needs. The understanding that a Design for All approach can lead to important improvements to the citizen´s well being increased the commitment of Decision-Makers.

As advisors we had to know if organisational structures working on municipal accessibility issues already existed. Lousã Municipality has an ombudsman for disabled persons and Viana do Castelo Municipality a “Health City Cabinet”. These structures were involved on MIASP coordination and assure its continuity. Although experienced in accessibility issues they lack specific Design for All knowledge. With training and management tools they can support the implementation in a more efficient way MIASP due to their local knowledge and influence. São Brás de Alportel Municipality, didn´t have such structure, so we recommended the appointment of a manager to run a “Working Group” that includes relevant municipal departments and external stakeholders.

Proasolutions.pt encouraged municipalities to join an international Network in order to obtain and share knowledge about Design for All/Universal Design with other municipalities. Seia and Penedono Municipalities joined the “Network for Excellence: Towns and Cities for All”. An important issue being civic participation, it was important to guarantee that this process was managed by independent organisations to ensure that social data is not biased by political or technical issues. For that reason we made a partnership with the University of Oporto.

ProAsolutions.pt is the ultimate technical body responsible for the MIASP. A strategic planning tool allows planning actions from an integrated Design for All point of view, taking into account the thoroughfare, public buildings/facilities, transport, communication and Web accessibility.

It is important to be aware of the specific needs of a municipality. Municipalities that have an important tourism sector like Viana do Castelo, Penedono, Macedo de Cavaleiros, Lousã and Penacova, developed “Sectoral Tourism Accessibility Plans” that proposed actions ensuring that all links in the tourism service chain are Designed for All. Celorico de Basto and Lousã, due to their cultural and natural heritage, developed specific Design for All projects.

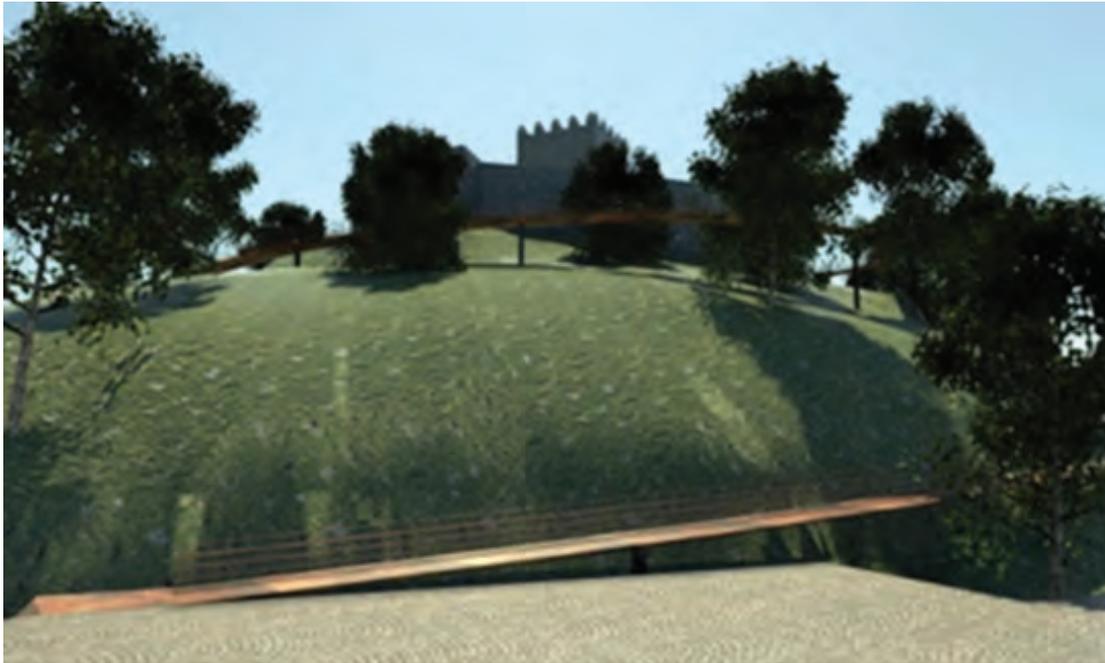


Photo: Holistic Architecture project to improve accessibility for All at Cultural and Natural Heritage using easy reversible solutions – Cabeceiras de Basto Municipality (© ProAsolutions.pt Lda, 2012)

We have been prescribing training for the widest range of municipal workers, providing qualification in subjects like Design for All, accessibility and presentation of best practices and case studies. For decision makers the training activities focused on the management and implementation of Design For All, based on “ECA for Administrations” (Aragall, Neumann & Sagramola, 2008) and also accessibility and public procurement, based on the “Build-for-All – Reference Manual” (The Build for All partners 2007). This training process is essential to promote Design for All in municipal procedures and services to citizens promoting more efficient knowledge management.

The optimisation of resources is essential in times of financial crisis. The advisor must help municipalities to allocate, in an optimal way, human, financial and material resources. A tool that can be recommended to municipalities is the use of free open source GIS software, that allow the management of accessibility information so that municipalities understand what actions to take in order to solve accessibility issues with maintenance interventions or what investment resources are needed. Since Portugal benefits from European Funds, the advisor must support municipalities to apply for funds to finance works to implement Design for All.

Besides joining the “Network for Excellence: Towns and Cities for All”, that gives municipalities the chance to communicate and market their Design for All actions, another communication and marketing tool is the use of new technologies. Tools (like AWGis) were developed with the aim of allowing citizens to get information about the current state of accessibility on their city, to know what Design for All actions have been implemented, to provide inputs on the need for Design for All improvements, to access a web forum for the exchange of accessibility information and a routing system.



Photo: AWGis routing system: calculates and indicates in real time itineraries best suited for each person's needs regarding accessibility conditions using GPS and accessibility status of public buildings tourism equipment and public transport (@ProAsolutions.pt Lda, 2013)

Authors:

Rafael Montes & Nuno Peixoto

6.7 Raising awareness and commitment to Design for All in the bathroom sector

The German Sanitation, Heating and Air-Conditioning Association (Zentralverband Sanitär, Heizung, Klima – ZVSHK) launched a number of initiatives for its 50,000 members in the bathroom sector in order to make them more sensitive to the Design for All concept and the necessary changes that go with it, and encourage them to put these changes into practice. A crucial element in the success of this project was the inclusion of external consultants* who provided the theoretical backbone and presented the subject to businesses in an attractive and accessible way, helping them to develop and test ideas.



They delivered background information about Design for All, challenged member businesses to compare themselves with their competitors, inspired them to think from a user's perspective and supported them in follow-up activities. This integrated approach suits companies who would like to implement the Design for All concept at every step of the way – from consultation, planning and installation to on-site maintenance work and improvements.

Picture: Emblem of the ZVSHK-Award, (© ZVSHK 2013)

The project is centred around an international trade competition, the ZVSHK product award "Bathroom Design for All". The team of external consultants contributed with their expertise in the following areas:

Providing information – explaining advantages for the consumer, but also highlighting advantages for the trade

- Defining the sector-specific Design for All criteria for the competition
- Delivering the subject in an easily understandable way, using clear examples and explanations
- Presenting and discussing the criteria in workshops, with the additional benefit of learning about successful implementation of Design for All in other sectors
- Articles and interviews in publications of the ZVSHK.

Providing a challenge – focus on the user in the development process is the competition's main goal

- Creating the concept for the competition and organising the applications procedure
- Networking and contacting potential participants, including coverage in the press and on international platforms
- Nominating a pre-jury and the international main jury
- Moderating the jury sessions, presence at the prize-giving ceremony

Providing inspiration – projects with external partners show how Design for All can become a useful and attractive differentiating factor

- Creating the concept and running the workshop Generationenwechsel (The next generation – Bathrooms of the Future) at the Universität der Künste Berlin, UdK (University of the Arts Berlin)
- Communicating the results in a publication, articles and talks, and during training sessions for the bathroom trade
- Concept and moderation of the research project Badlabor 2030 (Bathroom lab 2030) at the Hochschule für Gestaltung Offenbach, HFG (Offenbach Academy for Art and Design)
- Presence, talks and presentations at the world bathroom fair ISH 2015

Providing support – communicating the interest in increased Design for All activities and offering experts' support to ZVSHK association members

- Creating concepts and running training and advice sessions for strategic decisions and development processes (including Design for All, awareness raising, and user involvement)

Conclusion: Input from external experts adds to the skills and competences of the ZVSHK in specific areas. Subjects were discussed at a highly professional level, but presented in an accessible and attractive way. The experts' networking activities were an added bonus – they communicated activities, approached businesses and reached out to decision makers and jurors. Competition and connected activities were a success, attracting 55 international contributors, and were very positively received in the whole bathroom sector. The ZVSHK is planning another competition for the award at the ISH 2015, which will benefit from these past activities.



Photo: Jury and prize winners at the ISH 2013 in Frankfurt, (© ZVSHK 2013)

Authors:

Mathias Knigge (grauwert / EDAD) and
Matthias Thiel (ZVSHK)

6.8 Design for all in residential environments: Advisory service in a mobile exhibition environment



Picture: Project Logo of 'Wohnen im Wandel' (adopted german version,) (© S. Kesting, year 2012)

In 2009 the chamber of craft and skilled trades Muenster, Germany, together with ten partners initiated the INTERREG IVA-Project "Wohnen im Wandel". Its aim was to collect and disseminate information about comfortable and accessible living, concerning the concept of "design for all" against the background of demographic change in Europe.

People of all ages and craftsmen from relevant trades were being addressed using a range of instruments and media. One instrument among these is a mobile exhibition consisting of 13 rollup displays. It is normally accompanied by an advisor or consultant and a range of information brochures. This article tries to give a short insight into the advisory work experiences from 2010 to 2013.

The exhibition can be used for free by local or regional bodies or companies to support trade fair activities or information days. All displays can easily be transported in the boot of a car and the set up does not take more than 30 minutes.

As well as one title display six panels featuring characters aged from 28 to 74 have been designed to widen the potential target group for accessibility issues and to communicate the idea that "design for all" is not related only to age and disability but brings benefits to people in all kinds of life situations.

A further six room information displays show drawings of a virtual room in an imaginary private residential environment. Key points for accessible living are identified and basic easy-to-achieve solutions are recommended in order to increase accessibility and comfort.

In 2013 the original version has been updated with an additional display showing ways to combine accessibility modifications with energy efficiency alterations.

Exhibition visitors come either out of general interest or with specific questions about actual situations in their social or built environment, depending how well the event has been advertised. The advisor accompanying the exhibition is in direct contact with visitors most of whom are local people and advanced in years (60% are 60+).

An important success factor of the exhibition is its ability to communicate the benefits of "design for all" without sliding away into senior or disability products. A successful piece of advice describes "design for all" solutions as trendsetting, desirable and achievable and tries to find already-in-use products or solutions in the customer's environment. Trendy accessible showers, award winning products or the Smartphone-app-concept can be used as easy to understand examples.



Photo: Advisory talk in mobile exhibition "Wohnen im Wandel" at the Sparkasse MSLO, Hilstrup Branch, February 2012. Consultant Mr Wilken (Sparkasse, left) with customers, (© Kesting 2012)

However, if the exhibition is left without advisors or consultants or is only serviced by untrained staff of the exhibitor, visitors generally miss the exhibition's value as they equate its content with disability only. And none of the visitors would feel connected to those issues.

A trained advisor is needed to explain and persuade the visitor of the holistic approach of "design for all" and the personal benefits not only for the visitor but all his relatives or other potential users. It is essential for the acceptance and understanding of "design for all" that it is orally explained again and again.

Talking about physical alterations to a building it is important to say that there is no need to prepare each and every room for a potential disability in the future. Accessibility and "design for all" start in mind, not with a bath lift.

It is more important to use the occasion e.g. of a planned renovation or energy efficiency alteration to prepare the building structure for easy, quick and cheap "full accessibility" adjustments whenever these become needed in future and benefit from the increased comfort of "design for all" solutions now.

Through the use of available products the advisor can show the simplicity, utility and unobtrusiveness of many solutions and so lower the barrier in the customer's mind to redesign or adjust their environment with pleasure.

Usually some visitors are in a current dilemma with a relative in need of care coming home from hospital within the next days or weeks. Quick advice is needed and often interim alterations need to be done. Such situations cannot be solved during the exhibition event. The advisor would only mention some general options and send the visitor on to a public helpdesk where a home call and further help can be arranged.

Younger visitors (30+ / 40+) usually ask for specific recommendations for their parents or other relatives, but refuse to accept “design for all” solutions as a benefit to their own life. So far the exhibition fails to reach this potential target group. Even older people in their 60s would move on making the typical comment “...we’re not that old yet, thanks”. Other approaches to communicate the benefits through the display designs especially to younger people need to be developed. In the meantime it is the consultant’s job to get in touch with those people, trying to deal with their misunderstanding.

At the end of a conversation customers usually ask for information to take away and a range of potential planners or specialised craftsmen to develop the proposed ideas into real life solutions. The advisor would then provide a printed brochure and recommend the website www.wohnen-im-wandel.de, which provides a database with local specialists and additional information about financial support and applicable standards. Giving this supplementary information is essential to increase the successful outcome of the advice; however most of the 70+ visitors say they would not use the internet.

The mobile exhibition has proved successful as a means to inform and to get in touch with people. Personal advice can be supported and complemented by the displayed rooms and the characters provoke interesting and fruitful discussions. But in the end it is up to the advisor to bring the information to life. Only through good advice are people convinced that “design for all” solutions have a sustainable benefit for them and will increase their quality of life, regardless of their age.

Author:

Simon Kesting, Designer, PgDip

There are no corridors and each unit has double access to facilitate mobility within the house. There is a range of door types with sliding ones being preferred.



Photo: LA CASA AGEVOLE, wardrobe. (© Fabrizio Vescovo)



Photo: LA CASA AGEVOLE, small bathroom. (© Fabrizio Vescovo)

All the units have been designed and fitted out in a simple but functional way, using standard elements and not ones devoted to a particular group of users. The belief that wide spaces are necessary for mobility by wheelchair users can result in oversized solutions to doors, corridors, lobbies, bathrooms, toilets and kitchens, which reduce the size of bedrooms and living areas.

Nevertheless if we observe the dimensions and movements of a wheelchair we realise that some of the floor space for turning and approaching fittings can be provided with a clearance of 70cm from floor level. Many of the solutions and ideas of the Liveable House are based on this simple realisation.

In particular the layouts of the two bathrooms, usually designed to suit the specific needs of users, show that with reduced sizes you can still achieve space usable by a wide range of users. The functioning and inclusive nature of this experimental housing is thought to strengthen the Universal Design approach.

Components such as doors, bathroom fittings, technical aids and equipment, have been selected from standard ranges. By accurate design, avoiding the selection of special components and fittings, reducing the spaces and avoiding complex technologies it is possible to achieve an apartment with a high level of usability and with a consequent reduction in costs.

Thanks to these features the Liveable House is a training tool for the participants on the post-graduate course "Designing for All without Barriers" started in 1992 at the Faculty of Architecture of University of Rome "La Sapienza". The training project is designed and directed by architect Fabrizio Vescovo. Among the team of lecturers are some of the leading experts in the field of accessibility with an overview of international developments.

Author:

Daniela Orlandi, architect

6.10 NIDONDOLO - Game & Rehabilitation Tool - ALL in one

Designed by Mitzi Bollani – produced by LEURA srl

Nidondolo is a welcoming game of movement, suitable for children of all ages, as well as adults. It is a concrete example of a “design for all” product, wanted by the ASBI Association (Spina Bifida Association Italy) because their children could not play independently in public playgrounds and no company had suitable games in the market.

Involvement of stakeholders: Mitzi Bollani took up the challenge with a small working group of children with spina bifida, to design the project. The game had to ensure excitement and speed and had to be easily used by children with activity limitation without any help from adults.

Nidondolo looks like a big bowl, a nest in fact, that rotates, twists, turns and swings, with the slightest movement of someone using it. Its name comes from a combination of two Italian words: Nido = ‘nest’ and Dondolo = ‘swing’. Children can get into it by themselves, dropping inside, crawling on all fours and play in it lying down, sitting...



Photos: Nidondolo at Galleana's Park – Piacenza - Italy and the designer Mitzi Bollani speaking with the children to collect their views, (© Arch. Mitzi Bollani - May 2007)



Photo: Nidondolo at Galleana's Park – Piacenza - Italy with a girl with autism, well integrated in the play group. (© Arch. Mitzi Bollani - May 2007)

ACCESS FOR ALL and not just for children with activity limitation. Nidondolo is a new game that works with different modes and for that reason it attracts all children, facilitating their integration and group play.

Nidondolo does not discriminate in its design: a child with a disability, sitting or lying down in Nidondolo, looks like any other child. Nidondolo is tested for a load of 500 kg and spins easily and quickly even at full load. That aspect has surprised and pleased the children who, after testing the prototype, said :
“Now WE take care of the others!”

UTILITY FOR ALL: Nidondolo develops the proper psycho & motor growth of the child because it develops the "proprioception": the ability of our body to have the perception of itself in relation to the outside world. It is also a challenge because it allows 25 or more children to play safely together at the same time in a very small space (cm. 400x 400, equal to the dimensions of a room).

There are very few games of movement for babies under one year and Nidondolo in its small size cm.80 of diameter, is an important tool for body awareness, coordination and responsiveness.



Photos: Nidondolo at Sasso Marconi's Park – Bologna - Italy – Annual Congress of ASBI – Association Spine Bifida Ital, (© Arch. Mitzi Bollani - May 2006)



Tested and used in Child Neuropsychiatry, Nidondolo, in its small size is a useful tool for therapy, thanks to its three free movements of rotation, twisting and swinging.

In hospitals, the game satisfies the needs of young patients, even the weakest, because it requires no physical effort.

Photos: Nidondolo at Pediatric ward of "Niguarda" Hospital in Milan 2012 and at Infant Neuropsychiatry ward – "Guglielmo da Saliceto" Hospital in Piacenza 2009, (© Arch. Mitzi Bollani)

It is also usable by adults for the functional recovery of their lower limbs and as a training tool in some sports such as rugby.

Author:
Mitzi Bollani

6.11 Adapting a residential space through small construction works

This case refers to a partial renovation of an old priest's flat, in order to enable him to access the toilet, since he had difficulties in using the bathroom. The parsonage is located within a monumental complex in the historic centre of Milan. With age, the main user was facing daily difficulties in particular in using the bath by himself, because of his problems with movement, articulation and coordination. The main aim for the advisor was to improve the accessibility and usability of the room, in order to get a toilet with higher levels of usability, perception, comfort and maintenance, and by carrying out the works in a relatively short time. The request was to modify the bathroom according to the specific needs of its present user, at the same time keeping in mind that the flat could be given to another priest in the future. In this sense the requested design is "for All", since the choices had to aim at a functional and aesthetic result that should also be compatible with other users.



Photos: Initial look of the bathroom, (© Isabella Tiziana Steffan, 2012)

PROCESS

Eur-Erg-Architect Isabella Tiziana Steffan, Studio Steffan, Milan has been contacted as well-known expert in the field of Design for All, for designing and works supervision, by the Foundation "Opera Aiuto Fraterno", Church of Milan. The institution has been working for many years in the field of assistance and care for priests who are old or ill. In such cases, it is necessary to undertake an accurate evaluation, taking into account some functional evaluations and existing technologies. The most compatible solution with the user has been identified thanks to an accurate analysis of the problems and expectations of the priest, investigations with his doctors and physiotherapists, as well as an audit of the building and structural features of the monumental complex (for the installations in general and in particular to achieve a level entry shower).

Onlus" Foundation (www.portale.siva.it) helped in the evaluation of certain elements, among them the technological toilet lid. The team has tried to achieve a better use of the space, more suitable equipment, anti-slip materials and chromatic contrasts.



Photos: The bathroom after the works: the continuity of materials and colours, as well as the floor level in the shower area, increase the usable space, (© Isabella Tiziana Steffan, 2012)

To achieve an effective result for the project, based on real and concrete data, in such cases it is best to use different tools and methods of evaluation: the F.A.M. (Functional Assessment Measure) for the observation of behaviours and for the global functional evaluation; the OTIPM model for evaluating motor and procedural competences; the Barthel Index (a 10-item measure of activities of daily living) that, especially in the field of rehabilitation, gives an indicative score of the ability of the individual to eat, get dressed, manage personal hygiene, wash himself/herself, use the toilet, etc. In other cases, the team has used the ICF methodology (International Classification of Functioning, Disability and Health) for the evaluation of the environment in which the person lives and its role in defining the situation of handicap. At present the priest who lives in the flat is satisfied, especially with the shower, the tastefulness and pleasantness of the environment. The promoter of the works is satisfied since the environment does not have a "hospital" image and can therefore be acceptable also for future guests who might not have these particular problems.

In some similar cases it was possible to get tax benefits. In fact the technologies commonly defined with the term "domotics" are considered an additional resource and a support for people with physical/motor and sensory disabilities under the Law of the Lombardy Region n. 23/99 (for promoting the purchase of technologies aimed at expanding the abilities of a person by improving the accessibility of the domestic environment). The Italian Revenue Agency gives therefore the opportunity to access tax deductions (decreto legge n. 201/2011, art. 4).

Author:
Isabella Tiziana Steffan

6.12 Berlin - Design for All in Progress



Pictures: Berlin-design for all - Accessible Public Buildings and Public Outdoor Space, (© Ingeborg Stude, 2013)

Design for All is a name that sets a new standard in Berlin. In this time of demographic change, to Design for All is a social imperative.

Berlin, the winner of the 2013 Access Award, has made progress in this area.

Isolated 'concerns' have been replaced by networks. There is a continual dialogue between experts and individuals with their extraordinarily diverse needs in the working groups.

Barrier-free construction cannot exist without the design of appropriate legal frameworks and implementation regulations. But it is just as important to provide feedback on these regulations, to give interpretations, and to approach them as an integrated exercise. The manuals Berlin-Design for all (<http://www.stadtentwicklung.berlin.de/bauen/>

[barrierefreies_bauen/en/handbuch.shtml](http://www.stadtentwicklung.berlin.de/bauen/barrierefreies_bauen/en/handbuch.shtml)) have made a decisive impact precisely by providing information, disseminating knowledge, and promoting the consistent application of regulations for barrier-free construction.

Barrier-Free Construction is now a stated objective and a requirement for all those receiving contracts from the federal state of Berlin to develop a 'barrier-free concept' on the basis of these guidelines.

Questions about WHAT has to be done, by WHOM and WHEN are now set down. The concept will be able to shape the planning process from the earliest stages. The task is followed from the conception to the detail through the different phases of the planning process.

This will promote greater in-depth engagement with the theme of barrier-free construction. It will also require all parties involved in building projects to deal with this issue and allow them to learn as a result.

Design for All today requires comprehensive, specialised knowledge that for the most part has not been taught in colleges or universities.

Even today, there are few options for specialised training in barrier-free design. And yet, there are already highly trained experts in this field.

These individuals should be integrated into the planning processes. Their input can be used in a wide variety of ways depending on the size, complexity, or difficulty of projects, which may involve questions of historic preservation for example.

The most important thing is that the partners in the project come together at the earliest stages of the design phase.

I believe that an ideal planning process always involves a team of consultants. This would consist of a team of planners, Design for All experts from management and urban planning offices (that is, clients and contractors), and experts from the groups that are most affected by the design with a focus on particular types of disability or other needs specific to that project. However, staffing concerns may place severe limitations on this process. The result may be that urgently needed consultations and inspections are carried out by the boroughs less and less frequently.

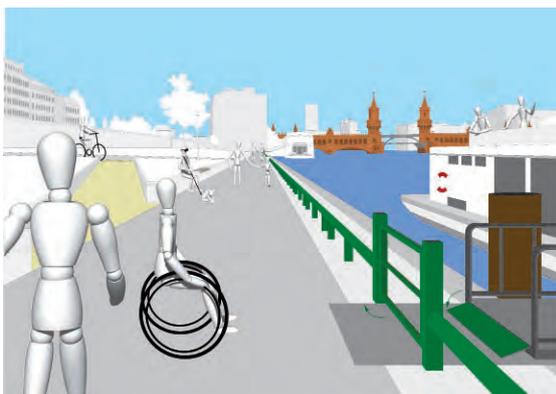
Managing projects without specialized knowledge can quickly lead to bad decisions or poor quality. Cooperation between contractors, planners and consultants will have a significant influence on whether or not there are successful outcomes. Yet to a great extent, successful outcomes require drawing inferences from building standards and legal codes and incorporating these into the larger design concept rather than simply adhering to specific parameters.

The overarching goal should be to join forces and approach each specific task with imagination and empathy for all future users. The new German standards Din 18040 provide scope for creativity. However, this potential can only be fully realized with extensive and well-grounded knowledge.

Barrier-free construction alone doesn't guarantee Design for All. Equipment, products and services are just as vital. In my view, the most critical issues today concern the ways in which cities provide orientation and information. These areas call for further development.

Berlin has taken a step toward this future with its orientation system project 'm4guide'. In coordination with another European project, its goal is to meet the needs of people who are blind and older people for outdoor pedestrian navigation. Design thinking processes are to be carried out and evaluated as an example of how networks are interdependent.

Other problems face the 'Round Table - Barrier-Free Tourism,' a forum founded last year chaired by the Permanent Secretary for Building and Housing. Their goal is to close the remaining gaps.



Pictures: Berlin-design for all - Accessible Public Buildings and Public Outdoor Space, (© Ingeborg Stude, 2013)

Who in Berlin guarantees, for example, that the Christmas markets are barrier-free? Who takes responsibility for making sure the ferry docks are fully accessible? The problems are extremely complex. Yet just to enable an older person to sit comfortably on a ferry boat and travel through Berlin makes this a worthwhile and important goal.

Author:
Ingeborg Stude

6.13 Workshop “eMpower in Luxembourg – Municipalities enabling the citizens”

The workshop “eMpower – Municipalities enabling the citizens” took place in Luxembourg from the 9th to the 14th of May, in the framework of the Grundtvig European Union Programme. The workshop illustrated the possibilities and potential for local municipalities to adopt the Design for All approach in urban public spaces, transport and in the workplace.

This training experience was led by Centre National Info – Handicap: since 1993 this local association has been dealing with the promotion of accessibility policies in Luxembourg and has been working for the recognition of the rights of people with disabilities.

Following the Design for All approach, the workshop has put together a work and ideas team comprising people with different challenging backgrounds. The team also included three participants with disabilities (a wheelchair user, a deaf person and a blind person) who took part in the exchange of knowledge and experiences, through the presentation of best practices and the subsequent round table discussions. Their participation has guaranteed the constant exchange of knowledge and experiences about the accessibility of different spaces focusing on their own point of view: they have personally tested the usability of all spaces and communication. Moreover, the presentation of best practices and the subsequent setting of round tables were the occasions to reflect together upon people different needs.



Photos: workers in the carpentry and reception in the City maintenance Service (© Lorenzo Lucchini, 2013)

Two examples of integration between the labour market and people with disabilities (specifically involving a blind person and a person in wheelchair) were shown in the headquarters of the Luxembourg City green areas maintenance Service.

The visit of the Schengen Castle and the cruise on the Moselle river allowed participants to experience first-hand good examples of accessible tourism.

The use of local and regional public transport for the daily transfers offered the possibility to directly test the accessibility of the rail and road means of transport and some examples of design and planning.



Photos: Technologies to improve mobility of people in wheelchairs: truck and bus treadmill to bridge the gap between platform and train (© Lorenzo Lucchini, 2013)

The interaction between municipalities and local associations was shown during the visit to Luxembourg Central Station and Belval-Université railway station: the workshop participants could vouch for the good level of accessibility, despite finding some problems emerged through the direct testing of spaces and communicating system by participants with disabilities.



Photos: train station. Some solutions to facilitate mobility of all people: tactile signals on the pavement, lifts to reach each platform of the station, double handrails and chromatic and tactile signals on the steps. (© Isabella Tiziana Steffan, 2013)

These visits have generated positive feedback in different contexts and the debates produced a lot of “food for thought” on accessibility: the increase in the number of tourists resulting from the accessibility of public spaces and means of transport and the positive economic impact related to accessibility improvements.

The workshop shed light on the need for the involvement of public administrations and experienced advisors, as well as on the importance of cohesion in the network of umbrella associations. In addition, other relevant elements were identified, such as the exchange of ideas and design interventions and the practice of communication marketing.

Accessibility and social inclusion stem from the development of coordinated and synergic actions: complying with the Design for All approach, Luxembourg created a virtuous circle of competencies that connects experts, associations of people with disabilities and decision makers in the framework of a participatory process.



Photo: public conference about the Design for All approach in municipalities; speakers from the City, from Info-Handicap, and participants from the workshop (© Isabella Tiziana Steffan, 2013)

The implementation of accessibility in Luxembourg was led by the driving force and the strategic support provided by Centre National Info-Handicap. The great effort on accessibility enhancement began in 1995 from the need to improve the accessibility of trains and railway stations: Info-Handicap started a collaboration with the national society of Luxembourg rail systems (Société des Chemins de Fer Luxembourgeois – CFL), in order to assert the rights of people with disabilities to accessibility.

In 2003 Info-Handicap created a group called MEGA (Multidisciplinary Experts Group on Accessibility) for technical advice: it connects different associations of/for people with disabilities, like the well-known association ADAPTH that nowadays relies on MEGA advice for the more complex Design for All projects. One of the most important customers is CFL, for the audit of restructuring projects; while Info-Handicap deals with the organisation of professional training courses, focusing on the reception of tourists with disabilities.

The providers of public services rely on the advice of the described associations, due to their time-honored experience, that guarantees their extensive competence about Design for All. The advisors have to focus not just on specific disability categories, but they must base their work on the participation in the design process of the widest range of final users and decision makers, taking their different needs and unexpressed expectations into account.

Authors:

Isabella Tiziana Steffan, Lorenzo Lucchini

7 POSSIBLE WAY FORWARD

International Register of Design for All consultants

When aiming for optimum performance, organisations constantly seek to improve their processes and approaches to project development, with a view to increasing their market share, improving customer satisfaction, reducing costs or managing risks more efficiently. The proper implementation of Design for All principles improves the chances of success in these areas and can help anticipate potential trouble areas which might arise during projects. However, it is important to know how to implement these principles and use appropriate methods to achieve the desired results.

Given that it is unusual for organisations to have experts available who can advise on all areas of Design for All, it is worthwhile to be aware of the limits of their expertise and use external consultants where necessary.

With the aim of supporting this initiative and providing it with continuity, it would be advisable to create an international register of consultants in Design for All, which will allow users to easily identify areas of activity, experience, geographic location, working languages, as well as the Key Factors collated in this publication (chapter 3). This would provide any organisations or individuals seeking consultancy support to make an informed decision in their selection process.

It will also promote collaboration within a dynamic community of professionals.

Author:

Francesc Aragall, Design for All Foundation

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Francesc Aragall, President of the Design for All Foundation, patron of Barcelona Design Centre, Councillor of the International Association for Universal Design, Past President and member of EIDD. Design for All Europe and European Concept for Accessibility Network, Ambassador of Saint Etienne, Cité de Design. Design for All practitioner in different countries (Singapore, European Union, Brazil, Saudi Arabia, among others), with his company ProAsolutions based in Barcelona and Porto runs projects in urban planning, policies, product design and business strategy.

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Sonia Carpinelli graduated in architecture at the University of La Sapienza in Rome. Afterwards she focused her working life on accessibility and Design for all, participating in national and international working groups on that topic, lecturing at training courses on accessibility, consulting on accessible design and Design for All. She is currently working for NeumannConsult in Germany, focused on Town and Regional Development, Tourism Consulting and Design for All.

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Eckhard Döring studied civil engineering and graduated with an engineering degree concentrating on the field of traffic engineering. Between 1989 and 1991 he was employed by an engineering office for road planning in Bielefeld. Since 1991 he has been working for the City of Paderborn in different departments (traffic planning and management, road planning and construction management). At present he is the assistant chief officer of the Road and Bridge Building Authority in the City of Paderborn managing the department of traffic planning and management.

Simon Kesting (Kesting Projektdesign), Designer & Consultant. The skilled joiner studied “project design” at the Academy of Design & Crafts Münster and “Accessibility & Inclusive Design MSc” at the University of Salford, UK. As a consultant on accessible & comfortable living he worked for the Chamber of Crafts Münster, supporting the INTERREG IVa-Project “Wohnen im Wandel”. Since 2012 he is a member of the executive board of “Design für Alle - Deutschland e.V. (EDAD)”.

Mathias Knigge, Director of grauwert (consultancy for demographically inclusive products and services), advises companies on older target groups and design for all / universal design. The designer and engineer has acquired a profound knowledge as research fellow in the research project „sentha“ (founded by the German research society (DFG) / University of the arts Berlin (UDK)). His main activities are studies, training (sensitisation), user-tests and product-development. He is the author of various publications and speaker at symposiums. As board member of EDAD (Design for All – Germany) and visiting professor, Mathias Knigge establishes Design for All as a reasonable response of product development to demographic change.

Lorenzo Lucchini graduated in Architecture from the Politecnico University of Milan in 2011; he works in the field of Sustainability, Heritage and Accessibility. He is member of ICOM-accessibility WG, member of Collegio Ingegneri-Architetti CQA (Environmental Quality Commission).

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Peter Neumann has studied Geography, Town Planning, Public and Building Law as well as Political Science at the University of Münster. Being director of the consultancy NeumannConsult based in Münster, Germany, he is also founder and president of Design for All – Germany (EDAD). Furthermore he is member of the European Concept for Accessibility Network (EuCAN), Senior Vice President of EIDD – Design for All Europe and visiting lecturer at several Universities and Academies. In 2003 the EU-Commission appointed him to the “European Commission Expert Working Group on Accessibility”.

Daniela Orlandi: Architect and journalist in Rome, employed at Capodarco, “cooperative sociale e integrate”, business unit “Sociale”. Manager of the thematic channel “without barriers” and consultant on accessibility issues in the Contact Center Integrated Superabile of INAIL (www.superabile.it). Activities of training and organisation of courses on “Design for All” for technicians, engineers and architects. Experience in the field of “tourism for all” and production of manuals with good practice to improve the quality of welcome for tourists with disabilities.

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Miodrag Počuč is PhD student at the Department for Traffic, Faculty of Technical Sciences in Novi Sad. He took his Master's degree in 2010. His focus is in the field of implementation of the concept “Design for All” in traffic management. He is the author of several publications on accessibility and design for all. He has ten years experience in this field and is active in civil society. He has designed and coordinated many projects related to accessibility. He is currently working for the Centre “Living upright” in Novi Sad as accessibility programme Coordinator. He is also Coordinator of the accessibility team in the City of Novi Sad and an active consultant in the accessibility field at the firm Adomne.

Bojana Rudić Počuč: Director of Adomne, is a consultant who focuses on Accessibility and Design for All. She is studying for a Master's Degree on the topic of project management. She has seven years experience in this field and is active in civil society. She is also working as an associate on the programme of accessibility in the Centre "Living upright". She has designed and coordinated many projects related to accessibility. She is a member of the accessibility team in the City of Novi Sad.

France Rolland, occupational therapist (ADAPTH asbl): "The design for all advisor must have a good understanding of all aspects of the human functioning and of the environmental factors to help design buildings where each individual can participate to the complete range of activities."

Silvio Sagramola, Director of the National Disability and Information Center – Info-Handicap Luxembourg and Coordinator of the European Concept for Accessibility Network EuCAN. Through his position at national level, Silvio Sagramola is linked with a huge and wide ranging network of organisations, administrations and service providers in Luxembourg and in Europe. His professional focus is on finding concrete and efficient answers and solutions in order to support people in accessing their rights, in this context the promotion of Design for All is a particular challenge.

Isabella Tiziana Steffan is an Architect and a certified European Ergonomist, owner of Studio Steffan based in Milan, Italy, since 1982, focused on Ergonomics and Design for All. She is a member of many Associations at national and international level: she is co-founder of ENAT, EuCAN member, Design for all Foundation delegate, member of UIA Architecture for All WG Region 1, ICOM-accessibility WG member.

Ingeborg Stude is a graduate in Urban Planning and expert on barrier-free construction. In the Senate Department for Urban Development and Environment Berlin she is coordinating ministerial and individual affairs in the field of barrier-free construction. Within this responsibility in addition to consulting architects, planners and institutions such as the Federal Building Authority in major projects of civil engineering in Berlin, fundamental planning principles of Universal Design in Berlin have been developed. Ingeborg Stude is giving lectures on Design for all at national and international level. She is an active founding member of the European Working Group "Barrier-free City for All".

Matthias Thiel is a qualified industrial engineer and manages projects on the topic of demographic change at the German Sanitation, Heating and Air Conditioning Association (ZVSHK), which represents the plumbing in Germany. It is his task to raise awareness of demographic change among the 30,000 plumbers in the association. In Germany alone, an estimated 2.5 million bathrooms will need to be suitable for use by older generations by the year 2030. A central aspect of this is the incorporation of "Design for All" principles.

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