

Intelligent Furniture - Agreement 2196-LLP-1-2009-1-IT-LEONARDO-LMP

# Intelligent Furniture project

## Training Package 1 - Design for All Detailed Curriculum

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**Content:**

<b>1.</b>	<b>General description of the training package .....</b>	<b>2</b>
<b>2.</b>	<b>Objective / aims .....</b>	<b>3</b>
<b>3.</b>	<b>Working Methods and implementation .....</b>	<b>4</b>
<b>4.</b>	<b>Target Group .....</b>	<b>4</b>
<b>5.</b>	<b>Modules and Themes .....</b>	<b>5</b>
5.1	Module 1: Why do we need Design for All .....	5
5.2	Module 2: Diversity and living .....	7
5.3	Module 3: What is Design for All .....	8
5.4	Module 4: Standards and norms .....	9
5.5	Module 5: Design for All in practice .....	11
5.6	Module 6: Communicating Design for All products .....	13
<b>6.</b>	<b>Suggestions for project work .....</b>	<b>14</b>
<b>7.</b>	<b>References.....</b>	<b>16</b>

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## 1. General description of the training package

Design for All is design for human diversity, social inclusion and equality. This holistic and innovative approach constitutes a creative and ethical challenge for all planners, designers, entrepreneurs, administrators and political leaders (EIDD Stockholm Declaration© 2004).

Design for All aims to enable all people to have equal opportunities to participate in every aspect of society. To achieve this, the built environment, everyday objects, services, culture and information - in short, everything that is designed and made by people to be used by people - must be accessible, convenient for everyone in society to use and responsive to evolving human diversity (cf. Aragall etc. 2003).

The practice of Design for All makes conscious use of the analysis of human needs and aspirations and requires the involvement of end users at every stage in the design process

The concepts of comfort and safety are integrated with accessibility and usability topics bearing in mind that to reach a better design quality the final users with all their different needs must be the centre of the project.

Design for All (in short DfA) means to design and plan in an inclusive and multi-sensorial way ensuring comfort and enjoyment to the final users.

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## 2. Objective / aims

The aim of this Training Package (in short TP 1) is to sensitize the attendees to the themes and value of Design for All in the furniture sector, in order to:

- increase the understanding of the evolving human diversity
- identify the different needs according to the end users and the requirements of objects, services, living spaces to respond to them
- raise the importance of Design for All to innovate the design and production process
- including people with their needs right into the design process
- comply with the legislation and norms about accessibility and inclusion within the design process
- contribute to the realization of collaborative networks within the different possible stakeholders (SMEs, designers, producers, marketing experts, final users..)
- enlarge the size of the SMEs' and companies' market

always bearing in mind that the new design approach through DfA can allow the development of products that are able to respond to a widest range of real needs as possible, at the same time guaranteeing comfort and enjoyment to the users.

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### **3. Working Methods and implementation**

Seminars, observation and analysis, discussions, theoretical lessons, sensitizing lessons with simulations, researches, workshops with potential users, usability tests, context simulation, mentored seminars and researches are the tools that will be used during the lessons to involve and stimulate the attendees, in order to arise their awareness for DfA.

Analysis of different user needs and usage situation/context of products will be the tool to find out the basic requirements necessary in the subsequent design development phase.

### **4. Target Group**

Maximum numbers of participants:

10-20 people for the knowledge-oriented training modules (1 - 6)

eventually additional company staff inside the companies for the product development module (project work/workshops).

Minimum skills to have access to the course for participants:

entrepreneurs, product developer, designer, planning craftsmen, advisors and marketing and planning staff.

Blended groups or homogeneous participant groups possible for seminars and project work, no preference.

Singles participants and working teams both possible for the seminar modules and project work.

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## 5. Modules and Themes

All in all 2 - 3 days of total length is foreseen, which means 16 - 24 lessons. Following have been defined 6 Modules, for a total amount of 16 lessons equal to 2 days.

The amount of lessons for each single module can be changed.

### 5.1 Module 1: Why do we need Design for All

**Keywords:**

Diversity, users needs, new market opportunities, innovation, ageing, demographic and other changes, customer satisfaction

**Participants:**

SMEs in the field of furniture, upholstery and interior design; designers, skilled craftsmen, interior architects, project manager

**Duration:**

2 lessons

**Objectives, description including competencies:**

At the end of this module the attendees will have a general understanding of the evolving human diversity and the related needs, to be considered while developing a new product design, to get new market and success opportunities.

SMEs and craftsmanship with individual customer orientation have best precondition for DfA development.

**Theme 1.1:** Introduction of the seminar, the teachers and the attendees

**Content:**

The teachers will introduce themselves and the content and structure of the seminar, underlining the aims of it that are:

- raising the importance of Design for All to innovate the design and production process,
- identifying the different needs according to the end users and the requirements of objects, services, living spaces to respond to them,

- contributing to the realization of collaborative networks within the different possible stakeholders (SMEs, designers, producers, marketing experts, final users...)

Then the addresses will introduce themselves, expressing, beside their name and profession, what their expectations for the Seminar are, if Design for All can probably bring to their work added value and new meaning.

## Theme 1.2: Why do we need DfA

Content:

- Demographic change
- Diversity, capability and disability
- Actual trends and life-styles
- Categories and paradigm shifting
- Innovation and new market opportunities for SMEs

Data related to Eurostat researches about the demographic dynamics involving Europe's population and the consequent moving age pyramids, clearly show the shift of Europe towards constant ageing. Along with that, the decline in capability but also increased wealth and free time come together. These clear tendencies have great consequences on the offers of products and services. For example, if other generations accepted as a consequence of age both the loss of capabilities and the inability to use products and services, the baby-boomer generation (now approaching retirement) shows less tolerance to accept products not easy to use, due to unnecessary demands on capability.

At the same time all the possible diversities in needs and behaviour of the customers should also be considered - from disability to temporary impairments, such as having a broken leg or arm, pushing prams, pregnancy, being in a foreign country without knowing the language.

Also new life-styles and trends are largely considered by the population, that include more social differentiation, environmental consciousness, comfort and security request with exclusiveness and aesthetics request. The changes in the social context, such as the wider differentiation of the family structure, the large use of (information) technology (like social media), the bigger request of services and supplies have direct consequences also on life-styles and on the furnishings choice. "Homing" and "slowing" seem to be largely the most common tendencies.

Consequently it's necessary to shift from the older paradigm of the "average users", generally male, young and fit, to one that can include a multiplicity of needs and diversities.

The SME's can't afford to ignore all these new trends.

Being the targets of DfA: improving user-friendliness, increasing usability and accessibility, considering user groups, avoiding stigmatization, supporting social, ecologic and economic sustainability, making good business sense, Design for All can be a real tool for innovation for the SME's, in order to include all the new

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trends and the consequent needs for the final users in the design and production process, enlarging their market and creating loyalty among the customers.

Practical training/working methods:

Theoretical lessons, PPT presentations, discussions

## 5.2 Module 2: Diversity and living

Keywords:

practical experience, disability, simulation aids, diversity self-consciousness

Participants:

SMEs in the field of furniture, upholstery and interior design; designers, skilled craftsmen, interior architects, project manager

Duration:

2 lessons

**Objectives, description including competencies:**

At the end of this module the attendees will have directly analysed a wide range of different needs of people, including human diversity and some kinds of disabilities.

Through a practical experience the attendees will define a clearer map of difficulties to be faced to carry out ordinary task in daily activities by a broad range of users.

Living diversity in order to understand the needs of clients. Practical self-experience

**Theme 2.1: Sensitizing: everyday life and different kinds of ability and disability**

Content:

- Practical self-experience using disability simulation aids, while interacting with furniture and objects commonly used in the normal daily life (table, working table, chairs, lighting system, tableware)

Practical training/working methods:

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Experiencing the daily life and activities interacting with objects and pieces of furniture and experimenting restrictions, while carrying out ordinary daily tasks, according to people's diversities.

Pretending to have a disability or activity limitation each attendee will use different types of simulation aids available in order to analyse directly the interaction with the environment in terms of spaces, objects and pieces of furniture.

Discussion:

- how the normal daily life and the activities connected look like, having an impairment
- how the use of helping and/or disability simulation aids can be helpful in the development of new products for the SMEs.

Simulation aids: Pram, age simulator, wheelchairs, glasses simulating blindness and other loss of sight, white cane, headphones simulating dumbness and other hearing losses, puppets.

Objects to analyse: Objects and pieces of furniture, such as table, working table, chairs, lighting system, tableware.

The spaces and environment as a medium where to deal with objects, furniture and the own impairment condition.

### 5.3 Module 3: What is Design for All

Keywords:

Design for All, human diversity, needs, requirements, DfA process

Participants:

SMEs in the field of furniture, upholstery and interior design; designers, skilled craftsmen, interior architects, project manager

Duration:

2 lessons

**Objectives, description including competencies:**

At the end of this module the attendees will have a general overview of the concept of DfA and the diversity of needs of the possible final users.

This is the basis to achieve awareness of the requirements necessary to develop a satisfying product (object / piece of furniture) for nearly any user group.

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### Theme 3.1: Introduction to DfA

Design for All, human diversity and needs, definition and criteria.

“Design for All is design for human diversity, social inclusion and equality.” (cf. EIDD Stockholm Declaration, 2004).

Design for All criteria are:

- usability for a big group of users without adaptation
- easy adjustability to different requirements
- possible usability with the addition of individual tools
- user involvement in all phases of development (from the idea to checking pre-series and the production).

Furthermore, an object, product, environment should be also:

- Respectful
- Safe
- Healthy
- Functional
- Comprehensible
- Aesthetically pleasing.

A series of objects and built environments for everyday life will be displayed, in order to show the attendees their usability properties, according to DfA criteria.

In addition, some other objects will be illustrated, as example of successful design, functionality and sale.

Practical training/working methods:

Theoretical lessons, presentations.

Discussion about the objects displayed their design and use:  
where it is possible to recognize the DfA criteria in the objects shown.

PPT presentation

## 5.4 Module 4: Standards and norms

Keywords:

standard, module, user, dimensions, needs

Participants:

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SMEs in the field of furniture, upholstery and interior design; designers, skilled craftsmen, interior architects, project manager

**Duration:**

2 lessons

**Objectives, description including competencies:**

At the end of this module the attendees will have a general overview of the European wide legislation and also of the national regulations, according to the country of the project partners.

**Theme 4.1: Historical excursus/background**

**Content:**

From Leonardo da Vinci to the ECA (European Concept for Accessibility) Manual, via the Modulor of Le Corbusier and the Neufert Manual: the different approach to the design process, through the definition of the man as canon to measure and define the world, the man considered as a average user, the definition of a range of values referred to a broader quantity of final users and different needs.

**Practical training/working methods:**

Theoretical lessons, presentations, discussion

PPT presentation

**Theme 4.2: Why norms?**

**Content:**

ECA European Concept for Accessibility -Technical assistance Manual,

CEN CENELEC Guide 6, Guidelines for standards developers to address the needs of older person and person with disabilities and the DIN Technical report 124 (Fachbericht 124) "Products in Design for All"

The performative Norms (as the new DIN 18040, the Italian and Catalan ones, Norway)

DfA Label in Italy

**Practical training/working methods:**

Theoretical lessons, presentations

PPT presentation

## 5.5 Module 5: Design for All in practice

### Keywords:

Design process, furniture, kitchen, table, armchair, users' needs, function, effort, use, action, knowledge

### Participants:

SMEs in the field of furniture, upholstery and interior design; designers, skilled craftsmen, interior architects, project manager

### Duration:

5 lessons

### Objectives, description including competencies:

At the end of this module the attendees will be able to observe, analyse and comprehend objects in relation to the potential users needs.

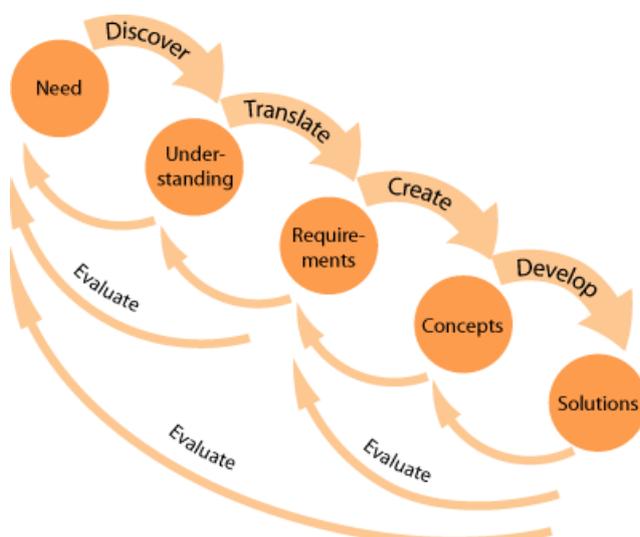
This will allow them to transpose the needs in requirements to be used in the designing process, in order to develop comfortable, usable and aesthetically appealing objects / pieces of furniture.

### Theme 5.1: Design for All process

#### Content:

- Design for All design process and its application in the development of new products within SMEs.

Figure 1: Design for All Process (one example)



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Source: [www.inclusivedesigntoolkit.com](http://www.inclusivedesigntoolkit.com)

The DfA process should start with a „Trigger“ or „Impulse“ from the customers, or from the designers or firm or from the economy/market and then should be translated into “needs”.

The process is shown as a waterfall one; following this, each action generates another consequent one.

In addition to the phases/actions suggested by the Figure 1 there are other actions to be included.

At the beginning of the process a research/benchmarking phase should be included, to have a general and deeper overview of experiences, solutions and materials already in or out of the market.

During the process, evaluations with the users / user test should be done iteratively to have feed-back to re-arrange the product until the final solution.

To find a proper solution and to realize the products is just one step before the presentation communication of the product and marketing phase, to position the product in the right way and to make it have commercial success.

Practical training/working methods:

Theoretical lessons, presentations

Discussion

PPT presentation

**Theme 5.1: Design for All in practice**

Content:

A range of objects / pieces of furniture selected by the lecturers and by the attendees (following a pre-information) will be analyzed (with direct and/or indirect usability test) and will be discussed.

It will start with the analysis of the use, function and aesthetics of the chairs, tables and furniture available in the meeting room of the lessons.

The attendees will directly evaluate them, accordingly to their own needs and visions.

The analysis of the objects can be done according to the subsequent points:

- short description/introduction images (with source)
- the object in the context
- the object and the users

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- usability test (directly made by the attendees, indirectly made via the definition of "personas")
  - advantage and/or disadvantage according to the use and the users of the object
  - evaluation
  - conclusion

In addition, to analyze the interaction of the object, the user and the context of use, the following questions will be used also:

- Who are the users addressed by the product?
- Does the product is/seem desirable, functional (define the overall function and the series of sub-function necessary to reach it), usable?
- What are the actions/activities that must be done to use it?
- Which part of the body is involved to use it?
- Is the product understandable? Which knowledge is necessary to use it?
- Are there any conflicts among function, form, use and aesthetic?

Practical training/working methods:

Presentations, analysis, direct usability test, indirect usability test (with the help of pre-defined personas).

The selected objects will be experienced by the attendees. They will analyse them according to a list of priorities and actions, to understand their use and value.

The object will also be used by some final users (real ones - among the attendees, or unreal - from personas pre-defined by the lecturers).

PPT presentation + some real objects selected by the lecturers.

Workshop, discussion.

## 5.6 Module 6: Communicating Design for All products

**Keywords:**

special target groups and DfA, terms and images to use and not to use, communication concepts, accessibility for broader and specialised markets

**Participants:**

SMEs in the field of furniture, upholstery and interior design; designers, skilled craftsmen, interior architects, project manager

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**Duration:**

3 lessons

**Objectives, description including competencies:**

At the end of this module the attendees will have a better insight of the communication needs and possibilities to reach success for a DfA orientated product.

**Theme 6.1: Communication of DfA products**

**Content:**

- differentiation of target groups and how to address them
- remember that DfA is Design for ALL: in general there is no profit when addressing special focus groups with discriminating terms of age, race, abilities, sex, gender, peer group, religion ...
- creating image that impresses the broader target group you want to reach
- making DfA products accessible (print and online)
- good examples

Final discussion

Practical training/working methods:

lessons, discussion, presentation of good examples, PPT presentation, examples of websites and printed material

## **6. Suggestions for project work**

Primary note for all:

Separated project work for the three training packages may not make much sense. Ideally a co-ordinating project work - that integrates the challenges of the three training packages - would be done after the training packages, not as a part of each one.

The project work aims to realise innovation in the furniture and interior design companies as a relation between the training packages' aims and challenges, and the possibilities and orientation of the companies (resp. the participants: project managers, designers ...).

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Each of the training packages foresees innovation of profession, product/service development and marketing in the furniture companies.

Practically the innovations would be implemented through

- specific existing assignments,
- products/services to be brought to the market in the future or/and
- development of services, identity and marketing of companies

The project development will be worked out through

- group workshops
- in-house seminars
- advice

The potential process steps of project development are proposed as action steps:

- reflect on initial situation and starting point
- set a set of objectives
- define elements for fulfilment
- analyse the market
- visualize the customer
- create the customer experience to be reached
- develop the product and services (with own design process requirements, e.g. Design for All, Service Design, ...)
- optimize the customer's satisfaction
- evaluate the so far generated services and product
- optimize the product, services and experience
- constitute the paths in the market
- adjust your approachableness of objectives
  
- celebrate the success
- reinvest your experiences and profit in new projects

The actual project development will be defined by the needs and objectives of the participating attendees/companies. The individual cases will be co-directed with checklists and strategic tools that should be adapted individually for each project.

The schedule and intensity of the workshops, in-house seminars and advices depend on the projects.

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