

# **Toward Universal Design in the Workplace: Guidelines to Create Strategic Workplaces Usable for Diverse Workers**

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## **Abstract**

We are faced with the arrival of an aging society accompanied by a decline in the younger work force. This dynamic demographic change raises a new requirement to the workplace; how broadly it can accommodate diverse workers with different physical abilities. This aspect will soon become one of the key factors in determining the value of workplaces. In order to maximize the adaptability of work environments, universal design, a concept of designing products and environments to be accessible/usable as possible for people of all ages and abilities, is expected to play an important role. It will eventually increase both the performance of facilities and the productivity of workers.

During the last two years, the Universal Design Research Committee of the Japan Facility Management Promotion Association (JFMA-UD) worked to develop practical guidelines on how facility managers can apply universal design to their workplaces. The accomplishment of this work was published in 2004, titled *Toward Universal Design in the Workplace: Guidelines to Create Strategic Workplaces Usable for Diverse Workers*.

Based on this accomplishment, this session will introduce some of our recommendations for the important processes and criteria that facility managers should keep in mind when planning universally designed workplaces. A case study that suggests how to apply the guidelines in practice will also be presented.

## **Introduction: For the well-being of workers and organizations**

Universal design is becoming more and more popular—it is applied as a main design concept in many industries, such as the automotive, housing, stationery, and information technology fields. The popularity of universal design is based on not only the accessibility's point of view that takes into consideration aging societies and the increasing social participation of people with disabilities, but also the increasing business competition that emphasizes the importance of customer-oriented design development to satisfy a variety of customers' needs. Universal design strongly emphasizes the customers' perspective and their satisfaction.

In the field of workplace design, target “customers” have been thought to be “Mr. Average”—young, healthy, average men. Compared to public spaces where accessibility has been promoted by laws, it is obvious that the field of workplace design lacks studies regarding accommodations for diverse workers, including women, older people, people with disabilities, and second-language speakers.

Facing the transition from the industrial to the knowledge society, however, many successful organizations have revealed that the diversity of the workforce is one of the most important aspects of maintaining organizational productivity and competitiveness in the global market. Therefore, universal design is increasingly seen as a long-term managerial strategy to establish the lasting strengths of organizations by physically accommodating a wider range of competitive workers as human capital.

Meanwhile, the trends in workplace diversity and universal design are being supported by the political movement in Japan. For example, there is a movement that local governments publicly disclose the employment rate of people with disabilities in each organization. In addition, the Law for Buildings Accessible to and Usable by the Elderly and Physically Disabled Persons was amended in 2002 so that the owners of office buildings are now obligated to make every effort to provide accessibility. These political movements will change the notion of what is required in the workplace.

As a response to these circumstances, in July 2003, the Japan Facility Management Promotion Association (JFMA) established the Universal Design Research Committee (JFMA-UD), whose objective is to examine the effectiveness of universal design in the workplace. As part of its ongoing research, the



JFMA-UD developed the guidelines for introducing universal design in the workplace. In 2004, these guidelines were published as a research report entitled *Toward Universal Design in the Workplace: Guidelines to Create Strategic Workplaces Usable for Diverse Workers*.

The purpose of this report is to provide facility managers with a tool for adopting universal design in their workplaces. Thus, this report takes the particular stance to discuss universal design from the perspective of facility managers. Therefore, the proposals in this report are practical and comprehensive rather than academic and rigorous. We hope that this report can contribute to improving the quality of work lives among the wider range of people, as well as the well-being of organizations.

### **Steps to Universal Design in the Workplace**

Traditionally, accessibility regulations have not taken into account the issues of workplace accessibility as much as public buildings. However, many social movements surrounding current business environments are accelerating the need for universal design in the workplace beyond mere compliance with regulations. For example, the changes in the employment background, such as a hyper-aging society, equity in employment, and globalization of the human resource market, affect the increasing diversity of workers. Moreover, societal attention to corporate social responsibility is increasing social responsibility investments, social infrastructuralization of real estate, and corporate responsibility for workers' health and safety. These movements, in addition to prospected regulatory and institutional changes, will consequently drive the further application of universal design in the workplace.

The effectiveness of applying universal design in the workplace should be considered in the broader aspects of corporate management, such as an increase in employee satisfaction, the improvement of workers' productivity, and the enhancement of corporate images.

#### *Step 1: Balanced scorecard analysis*

The balanced scorecard (BSC) is a multi-dimensional framework to measure organizational performance from four perspectives: financial, customers, internal business processes, and learning and growth. BSC was developed based on a concept that it is essential for the long-lasting prosperity of organizations to keep positive relationships with a wide range of stakeholders.

Using BSC as a framework to assess the impacts of applying universal design on corporate management, the first step toward workplace universal design is to analyze the expected advantages and

disadvantages of universal design for both facility owners and office tenants.

*Step 2: Critical success factors of universal design in the FM-cycle*

The next step is to identify critical success factors (CSFs) in each stage of the facility management business cycle that are crucial in order to accomplish universal design.

For example, in the stage of project management, 30 CSFs, each of which belongs to one of ten categories, can be identified.

*Step 3: Goal of each critical success factor*

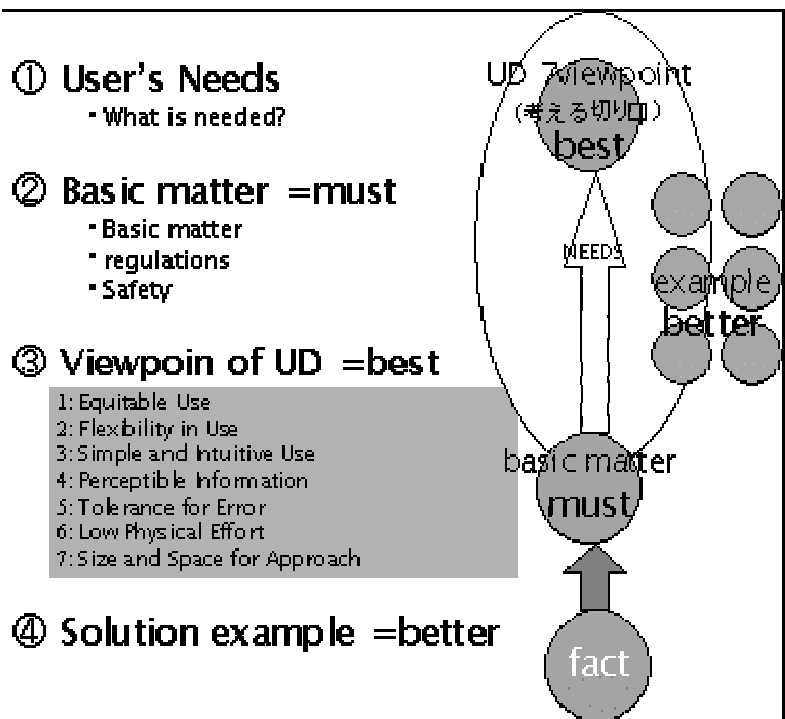
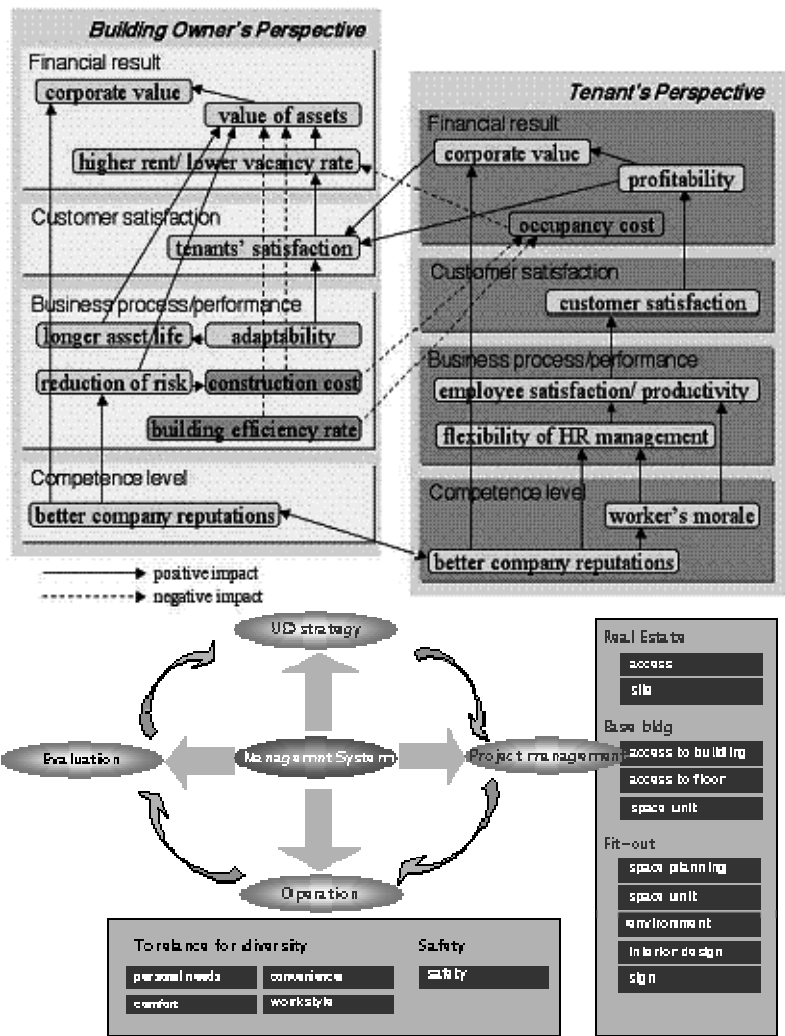
The third step is to determine the goal of each CSF based on user needs. In order to make goals manageable and practical, it is effective to take the following approaches to establishing goals:

- (1) Identify the minimum level of requirements

This level shows basic practices regardless of costs, including compliance with regulations.

- (2) Assume the best level of practice

This shows an ideal level of universal design practice, which



① **User's Needs**

- What is needed?

② **Basic matter = must**

- Basic matter
- regulations
- Safety

③ **Viewpoint of UD = best**

- 1: Equitable Use
- 2: Flexibility in Use
- 3: Simple and Intuitive Use
- 4: Perceptible Information
- 5: Tolerance for Error
- 6: Low Physical Effort
- 7: Size and Space for Approach

④ **Solution example = better**

incorporates viewpoints of universal design to the greatest extent.

(3) Set goals between minimum and best

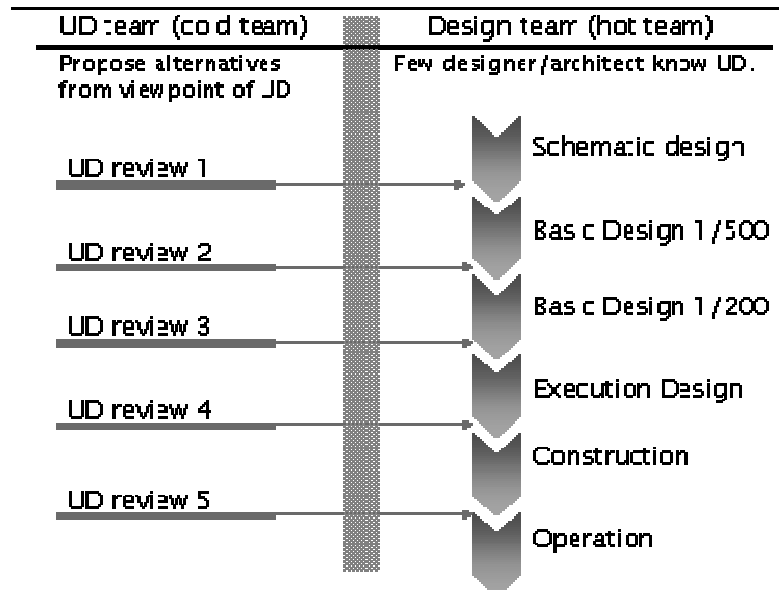
The realistic level of goals can be determined between the minimum and the best levels, by taking into account the priority of user needs and case studies that provide the ideas of possible solutions.

*Step 4: Universal design review*

Universal design review is a very simple and effective method to manage processes to apply universal design in a building project.

In each stage of design processes (five stages in total, for example), a universal design team (cold team, which represents users) reviews the proposals of a design team (hot team, responsible for overall design) and offers better alternatives from the perspective of universal design. By repeating this approach, it is possible to continuously improve usability and accessibility without regression.

Representatives from older people, those with disabilities, and other diverse groups can be invited to participate in a universal design team if necessary.



## **A Case Study of Universal Design in the Workplace**



