Optimizing Administrative Buildings by applying the Universal Design approach: Two case studies at Aswan city, Egypt.

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Abstract:  
The advancement of nations is measured on the significance it attaches to all different society members of various groups and abilities, and the availability of the capacities and services which provide everyone a successful social and economic life to fulfill their role in society. Societal exclusion is a common issue that captures the interest of governments and societies at this time. So some state governments attempt to integrate social groups of different physical, mobile, auditory and visual capacities into all fields without discrimination. One of the most important steps to prevent discrimination is providing the right for everyone to independently, easily, and optimally use the various facilities. Universal design aims at creating an environment everyone could use regardless of their age, size, disability or physical capacity. Therefore, the adoption of universal design as a design approach or upgrading old buildings is the best way to achieve social integration for all groups, as the application of universal design leads to create safe, accessible, and usable environments to all social groups.

Statement of the problem  
The research issue lies in the fact that social exclusion of many groups of people results in a difficulty for dealing with the built environment and the various buildings such as the administrative buildings, that is because of the lack of inclusivity in these buildings as the concept of universal design has not been applied while designing these buildings. Whereas achieving inclusiveness and community integration requires ease of movement and use of buildings for everyone.

Objectives of the research  
The research aims at raising awareness of the concept and principles of UD and the importance of its application. Moreover, the research endeavors to analyze and determine the problems impeding the application of the concept of universal design on the administrative buildings in Aswan, then the suggestions and solutions clarify how these buildings comply with inclusiveness, accessibility, and ease of use through the UD approach. To achieve these objectives, two administrative buildings in Aswan city have been assessed as a study case.

Research methodology  
The study is based on more than one research method such as the descriptive-analytical approach and inductive approach throughout analyzing and identifying the shortcomings in the design of the administrative buildings under study in Aswan city, then assigning proposals to achieve inclusiveness in these buildings to accommodate all societal groups. Additionally, the practical method was used by preparing a checklist of the study in the light of the concept and principles of universal design focusing on the most important architectural elements of the building which are “Parking and Passenger Loading Zones, Obtaining product/services, Using Public Amenities, Functional spaces”. It turns out from the results of the prepared checklist of the study case that the first building “Aswan city council” got 50.7% complying with inclusiveness, while the second building “the administrative building of Aswan University” got 49.2 % complying with the principles and requirement of universal design. The following points clarify the results in more details at the main and secondary elements level of designing universal administrative buildings:

- Parking and Passenger Loading Zones: the first building has no parking lot so it achieved a percentage up to 33.33% while the second building has a parking lot but it does not comply with universal design principles so it achieved a percentage up to 53.85%.
- Obtaining product/services: consists of (waiting zones, reception or information office, transaction equipment), the first building achieved a percentage up to 58.33 % complying with inclusivity while the second building achieved a percentage up to 53.85 %

Results and discussion  
The buildings of the study case have been assessed in the light of the concept and principles of universal design focusing on the most important architectural elements of the building which are “Parking and Passenger Loading Zones, Obtaining product/services, Using Public Amenities, Functional spaces”. It turns out from the results of the prepared checklist of the study case that the first building “Aswan city council” got 50.7% complying with inclusiveness, while the second building “the administrative building of Aswan University” got 49.2 % complying with the principles and requirement of universal design. The following points clarify the results in more details at the main and secondary elements level of designing universal administrative buildings:

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- Obtaining product/services: consists of (waiting zones, reception or information office, transaction equipment), the first building achieved a percentage up to 58.33 % complying with inclusivity while the second building achieved a
percentage up to 45.83 % because of the well-designed waiting zones and reception in the first building.

- Using Public Amenities: (including toilets and drinking water) equally complying with inclusiveness in the two buildings by a percentage up to 43.56%.

- Functional spaces “office rooms”: these are the most highly compliant elements with UD requirement by a percentage up to 60% in the first building, and 55.55% in the second one.

The study revealed that the buildings under study do not apply the requirements of universal design sufficiently. As a result, many groups of users have been excluded from utilizing the services of these buildings. So, it is necessary to adjust many design elements of them to improve their usability for every group and assure societal integration, participation, and support social sustainability. Also, by studying and analyzing the previous results, a series of problems related to ease of use and accessibility in the buildings under study have been identified and addressed. The study illustrates what can be solved of those problems, and what could be avoided during the design process in the next designs.

**Conclusion**

The research concludes that the partial compliance of the buildings under study with UD requirement increases the opportunities of achieving full compliance after conducting some modifications by add or integrate some advanced technology systems of ease of use and upgrade accessibility for everyone to these buildings. The importance of the research arises in raising awareness of designers and architects to the necessity of paying more attention to the needs and requirement of all social groups by applying the requirement of UD and consider future changes while designing and constructing the administrative buildings which call for intensifying scientific researches on this field to find solutions that make it easier for designers to follow UD as a design approach under the current developments in the field of design.

**References**


**Keywords:** Universal Design, Administrative building, Design for Al, Accessibility