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Creative eco crafts and sustainability of interior design: Schools in Aswan, Egypt as a case study

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ABSTRACT The incorporation of eco and heritage handicrafts into interior design practice to achieve sustainability is the safeguard for such crafts. In Egypt, there is a wide range of local materials, cultural resources and craftsmen and craftswomen. Many craftsmen no longer find it economically viable

to pursue craftsmanship as a primary profession, leading to their market exclusion. This paper attempts to clarify the relation between eco and heritage crafts and the development of sustainable interior spaces. In addition, this paper introduces a practical approach to develop interior spaces of schools buildings based on integration between heritage and eco crafts and interior design practice. Selecting school interiors to be a case study can add an additional potential to employ eco and heritage crafts for educational purposes. Accordingly, the experience of students who are enrolled with such important crafts will be improved.

KEYWORDS: sustainable interior design, eco crafts, heritage crafts, folk handicrafts, Aswan, sustainable schools

Introduction



There are many definitions of 'craft' which can be understood as 'the application of skills and material-based knowledge to relatively small scale production' (Adamson 2009, 3). Eco crafts can be defined as crafts which consider how to use the available resources consciously in order to develop products which can contribute to green living that conserve resources, such as water and energy, and also prevent contributions to air, water and land pollution. Due to the shortage of energy resources and the problems of climate changes, many eco crafts have been significantly developed. Such crafts use sustainably grown or raised ingredients, produced in ways that do not deplete the ecosystem. Recycled and recyclable materials are used widely in this type of crafts in ways that ensure creativity and human safety (Hagen 2009).

While eco crafts play an important role in keeping the environment clean and safe, heritage crafts have a vital and intrinsic role in sustaining our cultural heritage. Heritage crafts include our traditional craft skills which, once lost, it may be very difficult to recapture. Additionally, heritage crafts support our sense of place and identity, improve the sustainability and wellbeing of our society and contribute to empower our rural and urban economies. Jennings defines heritage crafts as 'Practices which employ manual dexterity and skill, and an understanding of traditional materials, designs and techniques to make or repair useful things' (Jennings 2012, 4).

Both heritage and eco crafts can be employed in interior design practice to achieve environmental, economic and social sustainability. Sustainable interior design as a practice can act as the safeguard for eco and heritage crafts. There is a great demand to shift from traditional interior design to sustainable interior design. Traditional interior design aims to provide aesthetic enhancements to an interior space for a client (Cargo 2013). Yang (Yang et al. 2011) describes

traditional interior design as relatively backward and conservative, only focusing on fashion, luxury design in small environments; an approach that ignores energy savings and emissions reduction, as well as the harmful effects on consumers' mental and physical health, and environmental pollution (Yang et al. 2011). Traditional interior design is characterized by a lack of connection between the practice and its resulting environmental and social impacts (Steig 2006). Meanwhile sustainable interior design focuses on the materials, aesthetic qualities, environmental and health impacts, availability, ease of instalment and maintenance (Cargo 2013; Moussatche et al. 2002; Pile 2003).

In Egypt, there is a wide range of local materials, skills and craftsmen and women. This paper attempts to clarify the relation between the eco and heritage crafts and the development of sustainable interior spaces in Egypt. In addition, this paper introduces a practical approach to develop interior spaces of schools buildings in Aswan City, the southern strategic gate of Egypt. The city of Aswan has been selected to be the study area for applying the suggested approach because Aswan has remarkable heritage in crafts and folk arts, creative exchange, arts education and civil engagement. †Its traditional crafts include beadwork, tablecloth production, palm branch and leaf crafts as well as clay and needle-work products (Chawla 2014).

This paper focuses on interior spaces of schools because the concept of sustainability gives the first priority to the future generation. It is supposed here that creative eco and heritage crafts should move from workshops and houses to interior spaces. The large number of children who use the interiors of schools should have the right to recognize their history, culture and heritage everywhere in their schools physically through different local and recycled materials and also at the conceptual level through the educational tools and projects.

Literature review

Regarding the concept of sustainable interior design, Pilatowicz defined sustainable interiors as interiors designed in such a manner that they sensibly address the impact of all their functions, parts and elements on the global environment (Pilatowicz 1995). Practically, many interior designers have limited knowledge about the adverse properties of the materials they specify (Guerin and Ginthner 1999).

Many researchers focus on the environmental dimension of sustainability in interior spaces. Warsco and Lindsey state that designers' choices regarding interior materials, airflow, furnishing placement, and fenestration are important to the prevention of indoor pollution (Warsco and Lindsey 2003). In regard to materials, Winchip (2007) recommends durable, adaptable finishes with a long life, and less square footage to reduce the need for unnecessary materials. Recyclability and reusability of a project should be determined by the choice of materials used (Osmani et al. 2008).

A lot of research focuses on defining craft and the importance of maintaining the heritage crafts and ensure their continuity. Adamson in 2009 defined craft as ‘the application of skills and material-based knowledge to relatively small scale production’ (Adamson 2009, 3). Craft can be seen no longer as existing against or in spite of modernity. On the contrary, it clearly emerges as ‘a modern way of thinking otherwise’ (Adamson 2009, 5). About the importance of crafts, Ferraro states that craft can contribute to the building of re-localised and resilient communities (Ferraro et al. 2011).

It is essential to achieve the transformation that sustainability requires. Bacon’s research concludes that project capabilities, transition to sustainability, and knowledge and skills associated with sustainable interior design practices present barriers to using sustainable interior design practices (Bacon 2011). For interior design students, to use local materials and traditional skills to achieve sustainable interior design seems not acceptable as the study of Usal shows that although students perceived durability to be important, they were more concerned about trends and fashion than sustainability (Usal 2012).

Lee (Lee et al. 2013) found that interior designers with a positive attitude towards the adoption of sustainable materials led to their stronger behaviour contention to adopt such materials. The results suggest the importance of developing interior designers’ positive environmental attitudes (Lee et al. 2013).

Cargo’s research found that although interior designers indicated that they place a high value on sustainability and felt a strong moral obligation to provide environmentally sustainable interior spaces to clients, they were not acting on these due to lack of awareness of materials selection databases that help reduce the complexity of designing environmentally responsible schemes (Cargo 2013).

Heritage and eco crafts offer a fertile alternative way of thinking about the world, and could be a catalyst for the re-assessment of how we choose to relate to the natural environment and with each other. Hayles argues that, although environmentally sustainable interior design has become a major issue in interior design practice, the frequency with which interior designers make sustainable choices in real practice is still limited, particularly where materials selection is concerned (Hayles 2015).

In addition to the three dimensions of sustainability, cultural sustainability is considered in many research papers as the fourth dimension of sustainability. Dessein defined cultural sustainability by representing its relation with the economic, environmental and social dimensions of sustainability. He suggested three representations of cultural sustainability which are culture as sustainability, culture for sustainability, and culture in sustainability (Dessein et al. 2015). In 2016, Soini investigated the three representations of cultural sustainability and clarified the differences between the three approaches, as illustrated in Table 1 (Soini & Dessein 2016, 4).

Although the theme of world interior day 2017 is ‘Interior Design for Generations’, very few researchers have noted the collaborative

Table 1. The three representations/approaches of culture in sustainability (Soini & Dessein 2016, 4) (Adapted by author).

<i>Points of difference</i>	<i>Culture in sustainability</i>	<i>Culture for sustainability</i>	<i>Culture as sustainability</i>
Definition of culture	Culture as capital	Culture as a way of life	Culture as a semiosis
Culture and development	Culture as an achievement in the development	Culture as a resource and condition for development	Development as a cultural process
Value of culture	Intrinsic	Instrumental and intrinsic	Embedded
Culture and society	Complementing	Affording	Transforming
Research approach	Mono and multi-disciplinary	Multi and interdisciplinary	Inter and trans-disciplinary

relation between sustainable interior design and creative local crafts to produce interior spaces for current and next generations. The Interiors profession increasingly faces the challenge of creating spaces that serve many different generations, addressing matters of accessibility, sustainability, and functionality that promote wellbeing and facilitate human advancement (IFI 2017).

Based on this literature review, this paper tries to fill the conceptual gap which has been concluded from the literature review. This research assumes that eco and heritage crafts can act as inspirations for interior designers who aim to conserve the history, culture and environmental aspects in the modern interior spaces.

Discussion

Craft has long been considered as being out of step with contemporary production and modern community. However, there is an improved interest in craft practices worldwide. In some countries such as China, craftsmanship has recently played an important role in the nation's manufacturing development. Although craft has an inherent relationship with sustainability, this relationship should be investigated systemically (Zhan 2017). The present paper conceptualizes the role of integrating heritage and eco crafts into the sustainable interior design practice as co-creative approach to add social-cultural value to modern interiors of schools. In this sense, sustainable interior design can be a mode of cultural activity to provide a setting in which people do things through purposeful and organized responses to their local environment. Engagement of creative crafts and local industries in the interior design can help collaboration and creates new ways of thinking and thus designing. This approach fits with the three dimensions of sustainability not only the environmental dimension. At the environmental level, Eco and heritage crafts can help in reducing wastes and pollution with harmful gases because of using natural and healthy materials in interiors instead of artificial and chemical materials. At the economical level, eco and heritage crafts depend mainly on cheap, available and local

materials which help in local development and reduce the problem of transportation costs. Additionally, creative eco crafts apply the concepts of reuse and recycle so the cost of the process of getting rid of wastes becomes less. Also using natural materials in interiors reduces the need of expensive mechanical ventilation because these materials fit with the local climate and improve the sense of thermal comfort.

At the social and cultural level, the social construction of interior space is the actual transformation of space through people's social exchanges, memories, images, and daily use of the material setting-into scenes and actions that convey symbolic meaning (Low 1996). By employing creative heritage crafts in interior design, the interior spaces will have their own identity and ensure that everywhere will not be as everywhere else which supports the cultural sustainability of the interior spaces.

While the use of heritage and eco crafts can contribute to the achievement of the comprehensive concept of sustainability of interior spaces, the approach of sustainable interior design also can contribute to the continuity and development of this type of crafts which may disappear if they are not utilized sustainably. Therefore sustainable interior design should reinforce and consider the concept of cultural sustainability.

The most promising link between craft and social sustainability is the extent to which crafts provide cultural connectivity. This connection can exist between the past and the current and between human labour and skills and objects and spaces that we use. Co-location of craft workers together with interior designers may also reinforce their cultural sustainability.

With more focus on the city of Aswan, the questions will be what Nubian old and recent crafts imply for sustainable schools projects, and how Nubian unique materials and skills contribute to develop sustainable interior spaces in order to prepare the ground for the future understanding of identity. School buildings have been selected in this research to apply the suggested approach because of the variety of interior spaces included in this type of buildings. Additionally, schools should be a place that conveys local heritage and the environmental culture of the city to the next and current generations. The waste of schools has a great ability to be recycled, reused and utilized again in refurbishing the interior spaces to achieve the concept of eco schools.

Although the Leadership in Energy and Environmental Design (LEED) rating system gives 16 points to the category of materials and resources and gives 21 points to indoor environmental quality and the Green Pyramid Rating System, which is used in Egypt, includes seven key areas of rating; two of them are to rate the indoor environmental quality and selection of materials, the social and cultural sustainability still more subjective to be rated.

In addition to the impact of using eco and heritage crafts to sustainability, the impact of using such crafts to education should be also investigated. Actually, using natural materials and heritage crafts in classes can help students to gain various skills such as visual

skills, investigative skills, and physical skills and also encourage greater independence. This is a great way to learn cooperation, innovation and team work. Using crafts to develop educational tools can help children to learn about the differences between natural and artificial materials and about different textures and colours and the effect of heat, oxidation and chemical operations on the properties of materials. Integration between eco crafts and educational purposes can improve the aesthetic sense of students who become able to make their school tools (bags, pencil cases, lightening unites) by using very simple and cheap materials. These creative crafts help students to recognize their local environment and its characteristics. Students who are involved in this sort of educational process can learn more about the original places of different materials and improve their knowledge and awareness by taking part in school trips to these places around them. [Figure 1](#) shows some ideas for using eco crafts for educational purposes.



Figure 1. (a) Creative eco crafts from Argone, Jorbah, unwanted cooper wires, dry pines (By the Authors). (b) Creative eco crafts using Jorbah, Argon and local wood can be used to teach the habits and traditions of different countries (Wajdy 2016, 23 & 27). (c) Threads and bricks can be used to in classes to teach the different geometrical shapes and the different geometrical properties such as height, length and width (By the Authors).

The incorporation of eco and heritage crafts in interior design practice in Aswan: opportunities and challenges

Aswan is located in Upper Egypt, about 899 km south of Cairo. The Nile in Aswan is distinguished by its many islands covered by palm groves and tropical plants. According to the UNESCO website as of 20 September 2018, Aswan is identified as a UNESCO creative city because of its rich and unique culture that goes back into pre-pharaonic eras (UNESCO n.d.). Different kinds of folk crafts specific to the city of Aswan in the past and during recent years are demonstrated in Figure 2. Since ancient times, Nubian women practice their handicrafts depending on local resources which cannot be found elsewhere. Their resources are agricultural crops, palms and trees grown in the region as well as other natural sources, such as clay mud, some limestone and non-calcareous stones. The palm tree comes to the forefront as Nubian use palm products such as Alcornav, Aerjon (palm branch) and wicker to develop creative forms. The most common crafts are pottery and the weaving of baskets and mats from palm fronds, as shown in Figure 2. The craft work in Nuba is family work. Nubian children, especially girls, learn the skills of these crafts from their mothers. (www.yadaweya.com/artisan/nubia-women-community)

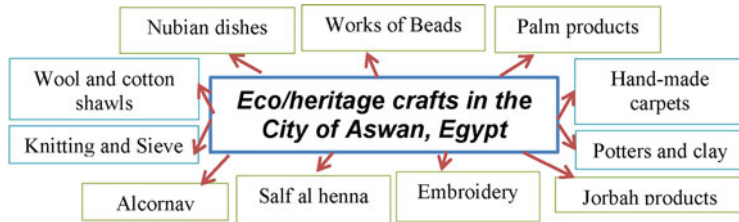


Figure 2. The different heritage and folk handicrafts in the City of Aswan (By the Authors).

Nubian handicrafts are known as highly original work that is truly handmade which reflects the Egyptian heritage and cultural identity as shown in Figure 3. To preserve the area’s history through the maintenance of over 2000 artefacts, Aswan has several institutions such as Aswan Museum and Nubian Museum which seek to reduce the number of people who suffer from poverty and illiteracy through culture and creativity. According to the UNESCO website, accessed 20 September 2018, these organizations include anthropology departments focusing on the preservation of folk arts and heritage crafts (UNESCO n.d.).

Yadaweya is an effective online organization which provides customers with a great variety of handicraft from different regions in Egypt. Such online markets play an important role in giving people a great handmade heritage experience. Fifteen different regions and communities in Egypt have been represented in Yadaweya’s first



(a)



(b)

Figure 3.

(a) Nubian craftswomen in Aswan have great skills for creating heritage products from palm waste (www.yadaweya.com/artisan/nubia-women-community). (b) Converting Argone to Jorbah which is used to make Nubian dishes (Wajdy 2016, 16 &18).

handmade collection: Nuba in Aswan, Sinai, Shalateen from the Red Sea, Naqada and Hagaza from Qena, Siwa, Sohag, Fayoum, Old Cairo, and the Delta region (www.yadaweya.com/artisan/nubia-women-community).

In order to develop connections between craftsmen and the big design companies and famous designers, architects and interior designers have started to visit the places best known for handicrafts all over Egypt, especially in distant areas such as Siwa and Nuba. Moreover, these designers aim to help the craftsmen to be able to compete with their imported counterparts. Interior designers and artists try very hard to solve problems which face the craftsmen, teach them how to advertise their products inside and outside Egypt.

'Anamel Masreya' is an initiative launched by a non-profit organization called Awtad, in cooperation with Mobinil (An Egyptian Communications Company). 'This initiative aims to provide technical and industrial school students and poor craftsmen with training. It also gives them the necessary materials to start and manage their own small projects', Sherine Alam, Awtad's head, has said (<https://www.egyptindependent.com/dying-artform-traditional-handicraft-production-verge-extinction/>).

From the preceding paragraphs, it is clear that there are various opportunities to achieve the interplay between heritage crafts and the sustainable interior design for creative use and re-use of cultural resources. On the other hand, as culture and creative local industries are a powerful driver for jobs, exports and earnings, cultural diversity and social inclusion, Egyptian creative crafts need to be more productive, dynamic and innovative. Indeed, Upper Egypt's rich culture

and heritage crafts face many challenges in the continuation and growth of such crafts. Some of the barriers of embedding handicrafts in the practice of sustainable interior design and decoration in Aswan can be summarized as follows:

- The shortage of linkages between interior designers and handicrafts workers.
- Interior design students do not have the knowledge and the experience of the local eco and heritage crafts which are available in their region.
- The craftsmen and craftswomen work individually and not under any governmental umbrella.
- The lack of availability of a database of the types of crafts, number of craftsmen, and local products and resources.
- A declining interest among the younger generation, who may not have the patience or skill to learn the craftsmanship required. Therefore, some items are going from rare to extinct, and the best craftsmen are getting too old to continue for much longer (Ezzat and Sonbol 2015).
- Many interior designers have limited knowledge of the adverse properties of the materials they specify (Guerin and Ginthner 1999).
- Most of interior designers select materials primarily according to clients' preferences, needs, aesthetics and cost, without considering sustainability as a criterion.
- Clients' resistance to integrating heritage objects in interior spaces and their preference for modern designs. Many customers are not aware of the value of applying heritage crafts and achieving a balance between traditional and modern objects in interior design practice. Accordingly, there is a little demand for the handicrafts work or appreciation of it.
- There is no connection between heritage crafts and technology to meet the needs of the market and improve the quality of the final products.
- Most of the crafts are practiced in rural communities in villages and islands far away from the big centres of marketing in the city which have led to a great marketing gap between the craftspeople and the clients.
- Handmade craft is dying in Egypt because many handicrafts workers have had to leave their country because the work has become unprofitable; many craftsmen have left this career and a lot of crafts workshops were completely closed. Therefore many craftsmen decided to revive their crafts in other places where people will appreciate their skills, civilization and culture.
- According to (www.ashoka.org), craftsmen become unable to find access to resources and skills that they need to continue in the market without losing their community identity. Accordingly many of the traditional practices are lost over time.

Craftsmen in Egypt try to remain competitive in the market to face people from the different communities around Egypt who focused on the production of cheap rather than competitive goods. The transformation of craftspeople into suppliers makes them less proud of their products with regards to their own heritage and competence

- Regarding the city of Aswan, there was a protocol to utilize the unused Nubian houses which are designed by the architect Hasan Fathy to establish the heritage crafts village as shown in [Figure 4](#). But this protocol has not been yet implemented due to financial reasons.



Figure 4.

It is recommended to utilize old Nubian houses which are designed by Hasan Fathy for establishment of heritage crafts village in the city of Aswan (Wajdy 2016, 31).

Developing sustainable interior spaces of schools in Aswan: Suggested practical approach

There are different types of interior spaces in schools buildings which can be classified, as shown in the following diagram:

In general, interior space consists of physical components such as walls, ceiling, floor and furniture and moral components such as scale, pattern, identity and value. Heritage and eco crafts can be embedded in the sustainable interior design of schools not only in the decoration of interior spaces but also in each component of the interior space. [Figure 5](#) shows the classification of interior spaces in schools. The selection of materials should be based on certain criteria such as aesthetic qualities, environmental and health impacts, effects on consumers' mental health, availability, ease of instalment and maintenance, energy savings and emissions reduction and initial and life cycle costs. The present paper introduces suggestions and

ideas to develop a sustainable model of interior space based on using the local heritage and eco crafts which reflect the Nubian culture in Aswan, Egypt.

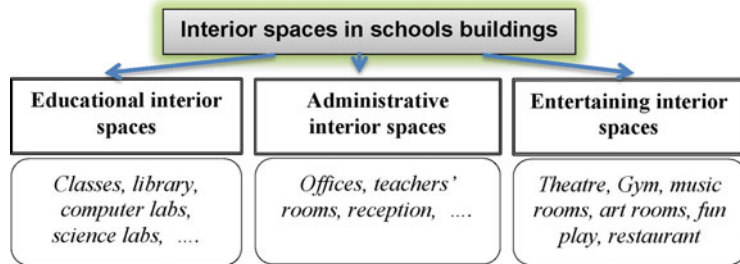


Figure 5. Classification of interior spaces in schools buildings (by the Authors).

Suggestions for walls and partitions

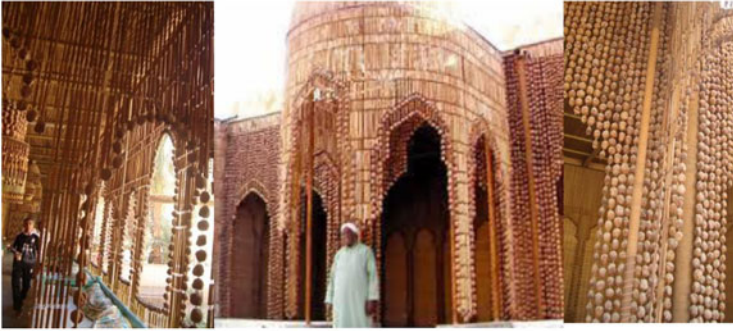
There are some handmade products which are made from local materials in Aswan that can provide physiologically and psychologically healthy indoor environments for children in schools. Regarding plaster, earth-based plasters are the healthiest wall finishes. Regarding wall covering, it is recommended to use papers made from rapidly renewable sources such as cork, grasses and other plant fibres but they must be used with an environmentally friendly glue or paste. Natural clay plaster allows a wall to absorb and release moisture as needed (Hayles 2015). Because the City of Aswan in Upper Egypt is well known for the high quality of its palm products, palm branches and leaves can be used in partitions and walls covering, as shown in Figure 6.

Suggestions for floors

Hard flooring can be made from different environmental friendly materials. Some of these materials are suggested here for interior spaces of schools, as shown in Figure 7, based on certain criteria which include availability in local environment, safety and naturalness, low cost of production and maintenance, relation to heritage and culture, quality and durability, the ability to be reused and recycled, reduced negative environmental impact, and additional criteria related to the aesthetic aspects.

Suggestions for ceilings

Nubian handicrafts workers in Aswan use palm fronds in very creative way to develop different forms and styles of ceilings. Such palm roofs are clean, green, safe and sustainable. This research suggests the integration of palm roofs in the interior design of schools. This type of ceiling can be used in school restaurants, school mosques, and activity rooms, as shown in Figure 8.



(a)



(b)



(c)

Figure 6.

(a) The use of Hyphaene (Doom fruits), one of the palms fruits in creating light partitions and windows treatment (By the Authors). (b) The use of palms' waste which are available in Aswan to create partitions (By the Authors). (c) Instead of traditional ways of painting and plasters, the use of wicker is suggested as walls covering in interior spaces of schools (By the Authors). (d) Colourful fabrics (handmade rugs) which illustrate folk and heritage scenes are recommended to be used as wall covering (www.yadaweya.com).

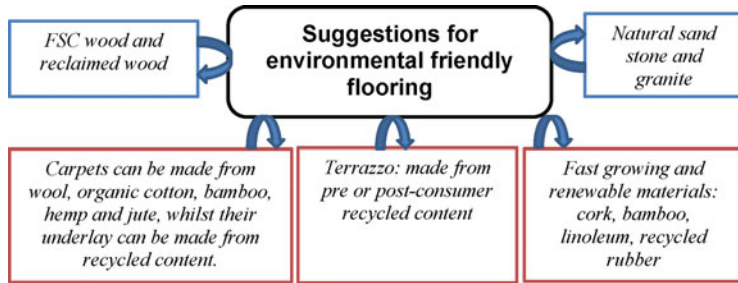


Figure 7. Suggestions for flooring to achieve a sustainable interior design of schools (By the Authors).

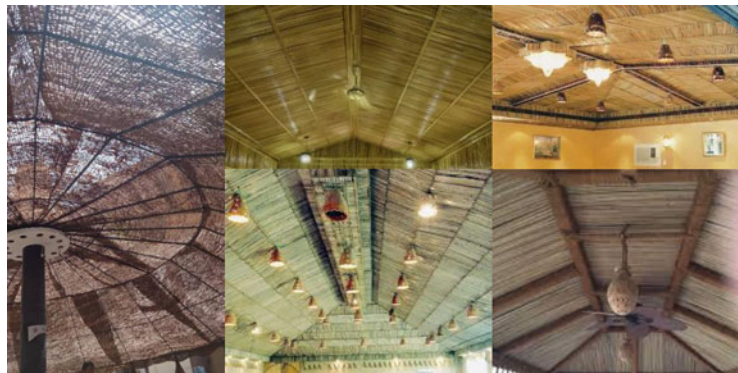


Figure 8. Different forms of ceilings created from palms wastes (By the Authors).

Suggestion for accessories and complementary elements

The suggested complementary elements for sustainable interior spaces are made from natural materials (palms product) and benefit from the heritage crafts of creating masks, lighting units and wall paper with very distinctive styles which reflect Nubian heritage and culture.

School waste can be a great resource for eco crafts which are based on recycling and reusing materials. A goal in this creative process is not to distort the recycled object so that it may still be recognized. Cartoons, metals from cans, fabrics, rice straw, glue and stones can be collected and reused in decorating the walls of classrooms and corridors. Pupils should be encouraged to be involved in converting useful waste from their schools in order to create decorative elements, such as those shown in Figures 9 and 10.

Recommendations

Keeping handicrafts alive is crucial for society. As one craftsman concludes 'I dream of an educational system that teaches children about these crafts, something that is sorely lacking at present. At the moment, people are writing PhDs about traditional handicrafts, but



Figure 9.

Handicrafts can play a great role to develop different natural forms of complementary elements of interior spaces of schools (By the Authors).



Figure 10.

Using different unwanted materials (plastic bottles and pipes, paper dough, fabrics, sand, gravels, grains and broken glass) in decoration purposes (By the Authors).

they are not being taught in schools. Appreciation is the first step. Then we can start exporting the products' (Samih 2017).

The present paper recommends some actions or interventions which can be implemented to encourage qualified handicrafts workers to be involved in interior design practice in order to protect heritage crafts and achieve the sustainability of interior design. The suggested recommendations are clarified in the following paragraphs.

Establishing schools for teaching young people handicrafts, especially the palm products, in order to bring up new generations that appreciate this art in Aswan is recommended.

It is crucial to raise the awareness regarding the available local handicrafts through a data base or data bank includes information and statistics about current heritage and eco crafts in terms of:

- The available local materials; their original areas, their physical properties, their quality and transportation costs.
- The number of handicrafts workers and types of their products.
- Classification of the workers according to their experience and individual skills and the quality of their products.

- The ways of marketing used currently to purchase the manual products.
- The individual and governmental initiatives which promote handicrafts to evaluate their effectiveness in this field.

The recommended database should be available online to stakeholders, researchers and all those who are interested in empowering heritage handicrafts in Egypt. Also the establishment of a research unit in Aswan to study the available local materials and their properties, the needs of clients and some quality standards is recommended here. This unit could contribute to the design of a trade mark for local products, perhaps related to the name of village or island where these products are created. It is important to develop a link between handicrafts and tourism by establishing tourists training centres which focus on cultural and environmental tourism and help foreign researchers who are interested in discovering the crafts realm. Such centres deliver the skills of the Egyptian heritage crafts to tourists through theoretical and practical workshops. In addition to these practice centres, establishment of creative crafts guidance centres which give handicrafts workers the chance to meet the masters of crafts in different fields to learn from them how to create high quality products will be very useful to ensure the quality of the products. The trainers should have great skills and experience to be able to develop an ideal model of each product and show it to handicrafts workers attending the workshops. The role of these centres should extend to explain to craftsmen and women how to use social media and online marketing. The role of media in encouraging, empowering and marketing the handicrafts should be activated. Workshops, seminars, events and competitions announcements regarding heritage crafts should be available through media such as social media and TV channels.

National and international conferences should be held in Aswan and organized and funded by the Ministry of Culture and Ministry of High Education. Researchers from art and design disciplines should be invited to represent their papers. Craftsmen and craftswomen and entrepreneurs should be informed about these conferences and invited to exhibit their products.

At a marketing level, some restrictions must be imposed on imported goods (such as those from China) in the local market regarding their quality and prices, to give Egyptian products a chance to compete. Also awards and certificates should be allocated to the best handicrafts workers who contribute to conserving heritage crafts or developing eco crafts in Egypt with a focus on Aswan. Non-governmental organizations should play an effective role in presenting these awards and holding exhibitions for the best products which reflect the Egyptian culture and heritage.

It is suggested here to benefit from experiences of other countries such as Morocco, Greece and Spain. These countries utilized

unused heritage buildings as workplaces for craftswomen to make and store their products.

Schools as the nucleus of society should have an effective role to develop individuals who respect and consider the concept of comprehensive sustainability through certain actions. School trips to heritage handicrafts workshop can be useful to raise the knowledge and awareness about such crafts. Also each school should have a place as a workshop for reusing and recycling the school wastes and encourage students to be involved in this process but in safe way.

Conclusion

Keeping handicrafts alive is crucial for society. Integration between heritage handicrafts and interior design practice is suggested in this research paper in order to protect this type of crafts from exclusion and to achieve sustainability of interior spaces. Our identity, culture and heritage should be reflected in interior spaces especially in schools where young people learn, play and obtain skills and experiences. It is concluded here that sustainable interior design is more than a concern with climate change and/or recycling. It is a paradigmatic shift in the way we look at nature and at humankind by raising awareness that the physical, social and cultural worlds are interconnected. Craft has an essential role to play in the paradigmatic transition to more sustainable societies. Craft contributes to give the sense of creativity and authenticity to the concept of sustainability.

In Aswan in south Egypt there is many initiatives and governmental and nongovernmental organizations which are responsible to encourage handicrafts worker to continue their work and transfer their skills and knowledge to the next generation. On the other hand, heritage and eco crafts in Aswan are under threat and many craftsmen and craftswomen are struggling to find markets for their products.

The present paper highlights the available materials and the common heritage crafts which can be embedded in the sustainable interior design of schools in Aswan. Practical ideas for applying handicrafts to develop different natural forms of flooring, ceiling, walls and complementary elements and accessories in interior spaces of schools have been suggested. These ideas can lead to more qualitative indoor environment which is not only clean and safe but also socio-cultural valued. Finally, this paper recommends some interventions to activate and empower the handicrafts in Aswan and develop connection between interior designers and heritage crafts workers.

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