

Textile Science and Clothing Technology

Miguel Ángel Gardetti  
Rosa Patricia Larios-Francia *Editors*

# Sustainable Fashion and Textiles in Latin America

 Springer

# **Textile Science and Clothing Technology**

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Rosa Patricia Larios-Francia  
Editors

# Sustainable Fashion and Textiles in Latin America

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# Preface

Sustainability is one of the issues that has been strengthened after the Covid-19 pandemic, consumers are now more sensitive to the negative actions of different industries on climate change. Thus, the textile and fashion industry, considered one of the most polluting requires designers, entrepreneurs and researchers to develop strategies that lead companies to generate processes and products more environmentally, socially and economically sustainable. The fashion industry in Latin America and the world is growing exponentially. Latin America has great potential because of the wealth of raw materials such as cotton and camelid hair that are recognized worldwide for their high quality, for the talent of its highly qualified labor and for its artisans. All this represents an opportunity to generate a value chain around a sustainable industry.

This book *Sustainable Fashion and Textiles in Latin America* aims to present case studies of initiatives launched in different Latin American countries, scientific articles and literature reviews that are a guide to good practice in sustainability in the textile and fashion industry.

In the first chapter, titled Socioeconomic and Environmental aspects of the production of silk cocoons in the Brazilian sericulture, the authors, Silvia Botoloto, Rodrigo Salvador, Graça Guedes, Eliane Pinheiro, Cassiano Moro Piekarski and Antonio Carlos de Francisco, present a case study of the sericulture value chain in Brazil, and the impact of the production process on the socioeconomic and environmental conditions of Brazilian communities.

The next chapter, Adapting sustainable design assessment tools for local development. Some insights over Argentina's clothing industry by Carola Ruppel; Celina Monacchi and Rocío Belén Canetti, through the development of a case study, show us the development of a self-declaration tool in sustainable design management implemented in Mar del Plata, Argentina by The Sustainable Design Research Group (GIDSu), and that due to its effectiveness could be scalable to other sectors in the Argentine industry.

Next, Elizabeth Davelaar and Marsha A. Dickson in the chapter Nongovernmental Organization Support for Sustainable Artisan Business, through an analysis of case studies of NGO intervention in groups or communities of artisans, show that the relationship with the NGO results in the acquisition of new skills through training,

and knowledge of the use of new materials, which will have a positive impact on the existence of demand and the accompaniment of the NGO.

Following this, Sanjoy Debnath, in the chapter titled *Flax Fibre Extraction to Textiles and Sustainability: A Holistic Approach*, discusses general aspects of the flax value chain worldwide and highlights the opportunity it has to develop in the midst of sustainable processes that make its use possible in different industries.

In the next chapter, *Strategic Design for Social Innovation in the Fashion System: the Sustainable Fashion Ecosystem Case*, Karine Freire shows how through strategic design processes open collaborative ecosystems can be developed in search of a common good that promotes values towards sustainability.

Then, Sebastian Garcia and Anthony Halog in their chapter titled *Pursuing a circular and sustainable textile industry in Latin America*, develop an analysis of the textile sector in Latin American countries, showing that a common behavior is the decline of local textile markets by the introduction of Asian products. They also observe a trend of development of artisanal textiles and sustainability programs with the transformation of recycled textile materials.

Later on, Diana Patricia Gómez García, in the *Sustainable Latin America Aesthetic*, presents a review of the literature on the context in Latin America and the formulation of the concepts of aesthetics, fashion and minimalism and how they are related to give birth to a strategy to design a sustainable aesthetic.

The next chapter, *Value embroidery. Design-oriented actions to support Paraguayan crafts for local female self-determination*, by Giovanni Maria Conti, presents the results of a collaborative project of Italian institutions with specialized artisan and design institutions in Paraguay, which had as an objective the training of instructors and best practices of crafts in communities, with a vision of sustainable design.

Then, in the chapter entitled *Public Policy and Legislation in Sustainable Fashion*, Analia Pastran and Evangelina Colli, emphasize the importance of policies and standards that will be the guidelines for sustainable fashion, highlighting that the same industry must take responsibility for generating change.

We continue with *Circular business model alternative from pineapple waste for textile fiber rope production: Case Costa Rica*, by the authors Roberto Quirós, Esteban Valverde, Luis Torres, Rodrigo Chamorro, Paola Gamboa, Carolina Va'squez, Diego Camacho and Anthony Hallogc, who present an evaluation of the alternative circular business model, from the use of pineapple waste, generating alternative sources of income for agricultural communities.

Subsequently, María Eugenia Correa in the chapter entitled *Fashion, design and sustainability. New horizons in the ways of conceiving production processes*; presents a new production model in a sustainable logic with principles of ecological and ethical awareness.

In the next chapter, *Incorporating consumer perspective into the value creation process in the fashion industry: A path to circularity*; Eliane Pinheiro, Rodrigo Salvador, Antonio Carlos de Francisco, Cassiano Moro Piekarski and Anthony

HalogRodrigo, suggest circularity strategies for incorporating the consumer perspective in the creation of value in the fashion industry, developing a data collection work with surveys to 20 companies in Brazil.

In the present chapter, Cultural perspectives for fashion sustainability: Learning from Brazil, Julia Valle-Noronha, Namkyu Chun , through case studies demonstrate the development of sustainable fashion from a cultural perspective of fashion design, from a symbolic, social and material dimension.

The following chapter, Brazilian Organic Cotton Network: sustainable driver for the textile and clothing sector, presented by Larissa Oliveira Duarte, Marenilson Batista da Silva, Maria Amalia da Silva Marques, Barbara Contin, Homero Fonseca Filho and Julia Baruque-Ramos, describes the value chain of organic cotton and highlights the opportunity to generate an industry that is aware of its effect on environmental costs with organic crops of raw materials such as cotton.

In the chapter Sustainable Fashion, Luis Chaves and Shirley Villalobos analyze the relationship between the concepts of fashion and sustainability through a literature review and comparison of different textile fibers that the industry uses, highlighting the importance of establishing indicators that help companies to measure and take appropriate decisions based on their environmental impacts.

Finally, in the chapter entitled, Upcycling as a tool for participatory critical reflection, Lucia Lopez Rodriguez presents success cases of Latin American designers who implemented upcycling, through the intersection of design, art, social projects and education, promoting synergies between actors to generate a transformation in the current fashion system that contribute to awareness and reduction of environmental impact.

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# Bordado De Valores. Design-Oriented Actions to Support Paraguayan Crafts for Local Female Self-Determination



Giovanni Maria Conti

**Abstract** This paper presents the design actions and the results obtained in the project “Development of fashion products”, a joint operation carried out by the Design Department, Milano Fashion Institute consortium and the IILA, Instituto Italo-Latinoamericano, based in Rome; aimed at creating a training course for trainers and local development activities, respectively, in Paraguay, to understand, support and develop actions related to micro-entrepreneurship and women’s self-determination. The aim of the project “Development of fashion products” was initially to create a training course for trainers from Latin American institution, especially for trainers from Instituto Paraguayo de Artesanía de Asunción, to strengthen the training activities already underway in the institute. The course held in Milan in 2 weeks through three macro themes: Fashion Design Management, Technologies and Merceology for Fashion, Design and Product Development—the latter in the form of a design workshop on research methodologies, organization and management of a fashion collection—with the aim of bringing participants to the modus operandi that today characterizes the development of a fashion product within the most prestigious made in Italy brands. The second phase of the project is focused instead on two international actions, in two municipalities of Paraguay, Pilar and Yataity, with the aim of achieving a co-design workshop with two groups of women artisans specialized in embroidery, to transmit to them the concepts of micro-entrepreneurship, female self-determination and improvement of female workers in their communities. Through this field experience, we can observe that creativity in design combined with the manual work and the ability of the artisans to know how to manipulate materials represent the expression of a society wish, able to understand the changes; today, the object of market and consumption is not only the simple possession of a specific product but also it is the experience, the “story” that the customer can live inside the object, according to values of the manufacture that create or add value to the existence.

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**Keywords** Craftsmanship · Design · Co-design · Feminine self-determination · Manual work · Craft

## 1 How Design to Improve the “Know-How”

Designer’s skill to build connections and be the mediator between producers and consumers is not a new feature of the profession. By nature, designers find themselves having to communicate with actors of different levels but may be involved in a project with a single company, assuming then the role of “facilitator”. In this context, the designer must make use of his/her ability to interpret the various languages and build a relation and to push for innovation in the relative system.<sup>1</sup>

At the international level, unprecedented opportunities to build connections, networks and supply chains are available now. This phenomenon has certainly been facilitated and accelerated by the development of communication and information technologies that allow the exchange of design data at a rate that cancels physical distances. Still, the fact is that the “world of design” reports are not attributable to individual actors but enlarged to the community of scholars who represent the scientific debate and design verification at the international level. Today, the contamination of the design languages, cross-fertilization between disciplines methodologically related and/or different represent unprecedented mergers and design produce specific local know-how.<sup>2</sup>

## 2 From Micro to a Macro Reality

*“The guru of the ‘global village’ concept, Marshall McLuhan, predicted in 1966 that in the future, the role of the craftsman will not be more important than ever before”.*

*“Four decades later, there are some interesting signs sustaining this forecast: the growing awareness by the public and private sectors as well as regional agencies for International Cooperation of the dual role of crafts in their blending of traditional and modern skills, creativity, economics and in their social-cultural impact on sustainable development, and so have increased the public’s preference for eco-friendly, handmade, quality products and the greater recognition of the very qualities we take for granted in crafts—qualities of timelessness and permanence, the adaptability of*

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<sup>1</sup> According to Zurlo, among the different roles that have been attributed to design, “*design has (also) the possibility to build stable relationships with different skills and exploit them if necessary. This system of relationships, external to the company and linked to the designer’s system of relationships, favors cooperative processes of creating new knowledge*”. In Zurlo F., (1999) Un modello di lettura per il Design Strategico. La relazione tra Design e strategia nell’impresa contemporanea, Final dissertation of Ph.D. in Industrial Design, XI ciclo, Politecnico di Milano, p. 162.

<sup>2</sup> Conti G. M., Dell’Acqua Bellavitis A. (2006), *Cross Fertilization: the path for Innovative Fashion and Design*, Proceedings of D2B The 1st International Design Management Symposium, Shanghai 2006.

*artisans to their materials and to changing needs, and above all, the spiritual dimension of crafts. These are all favorable trends, nevertheless, counter-balanced by some disturbing contradictions. In today's "global village", the artisan is, paradoxically, more and more disconnected from consumers' needs and tastes. With the expansion of markets and the spectacular growth of tourism, the traditional direct, personal contact between makers and users has been disrupted. Can the artisan take any longer, as in the past, the combined roles of a designer, producer and marketer? In this context, there is an increasing demand for well-applied design, much of which comes from the local cultures and from the imagination and creative skills of artisans".*<sup>3</sup>

As evidenced by Indrasen Vencatachellum's comments, there are interesting signs that show a greater interest in the peculiar character of micro and small enterprises' productions, with widespread difficulties for small producers to connect to international networks of production and distribution. Many international institutions, including the Design Department and Milano Fashion Institute—MFI have found how difficult it is for small producers not to have tools capable of helping them in the changes in the socio-economic world and above all the inability to relate to other actors to improve their growth and development of their products. According to Indrasen Vencatachellum, in order to face the continuous change, it is necessary to break with the traditional ways of working of craftsmanship and make the artisans dialogue more with the designers whose task will be to understand how to alternate the "ethnic" aspect of the product based mainly on the characteristics local, to a "narrative of the product" in which the value of the product is linked to its quality of the materials that take on new meaning through the symbolic, emotional or identity relationship that the consumer is able to experience. Based on these premises, the course "Fashion product management" was designed for four trainers from Instituto Paraguayo de Artesanía de Asunción with the aim of presenting participants with the main themes that characterize the various stages of the process of developing a collection, even on a small scale, within the textile fashion contemporary sector.<sup>4</sup> In particular, the course (given at Milano Fashion Institute, Milan, the Interuniversity Consortium formed in 1997 from the Polytechnic of Milan, Bocconi University and Catholic University of the Sacred Heart) consisted of three consecutive modules:

- Fashion Design Management, with the aim of presenting the main business models of the companies that operate within the chain of the Italian contemporary fashion industry, the key factors and the main operating business models and the main evolutionary scenarios that characterize the sector; and relevant to manage the relationship between management processes and creative processes, with particular emphasis on different approaches to the management of creativity, from the stylistic identity to the different product strategies.

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<sup>3</sup> Indrasen Vencatachellum, Foreword, in "Designers meet artisans. A practical guide", craft revival trust, Grass root Publications, New Delhi, India, 2006.

<sup>4</sup> In Conti [8] Towards a Cross Cultural Society; from ethnicity to design, "narrative" heritage drives innovation. Mapuche Weavers and Italian Designers co-create for fostering diversity. Projecting Design 2012, International Conference Santiago, Chile, 2012. Pag. 181.

- Fashion Technologies and Merceology, whose objective is to offer an overview of the main production technologies for the fashion product as well as a solid knowledge of the materials and their uses. The technological developments and innovation in recent years have made available a series of fabrics commonly used for clothing. In this specific case, the module was designed to provide the knowledge of the participants as a “trader of basic products”, from fiber to yarn and from textile to woven, also proposing to offer knowledge of leather articles and accessory materials.
- Product Design and Development, the module to study the various stages of the development process of a fashion collection, identifying both the activities related to the organization and management of creative processes and the relationship with the planning of the architecture of the collection according to the links of companies and market. From the definition of the elements that characterize the stylistic identity of the company and the DNA of the company, it has been demonstrated, according to the different business models in the system, the different design processes adopted, the factors involved, the types of fashion products developed. Each phase of the development process of a fashion collection is deepened: the development of research and the definition of the collection scenario, the definition of the architecture of a collection and the development and engineering of the collection.

The teaching activities, in addition to offering lectures, also involved several tours; the first in the Vitale Barberis Canonico to Pratrivero (Biella), a vertical business reality in the creation of high-quality fabrics, in order to show how the quality and “properly done” Italian part of the raw material and the way in which the Industrial textile sector has been operating for more than 150 years in the form of quality control, attention to industrial and production processes, strong participation in environmental issues and sustainability. The other visits are organized within the LP fashion studio (the largest research center for leather and leather goods), the Design Museum of the Milan Triennial and in the showrooms of Armani Casa and Bottega Veneta Home, with the objective to show how the Italian textile sector is transversal to the Made in Italy product categories so that the fabric can be used both in clothing and in interior design and contract.

The course has exalted the points of view of the product-fashion in its transversal character, which shows the complexity and richness that characterize the Italian industrial system that, in the textile-confection sector, is very vast and irregular.

With regard to the way of learning content, since we dealt with professionals, teachers, experts in textiles and craftsmen, the purpose was not to give purely theoretical lectures but to seek a continuous exchange to understand how the content and the “way of doing” of Italy could be read, understood and, in a second moment, adapted to the territorial realities of Paraguay, instead of saying “how it is done” the objective has been to stand out as an international training entity, such as Milano Fashion Institute, which could accompany, through the training of trainers, the countries that approach Italy to understand the business dynamics and design.

### 3 Actions: From Ethnic to Narrative Product

Before starting the critical analysis of projects, it is useful to have an overview of some suggestions given by past experiences in this field. There are two main examples that we can refer to in planning the transfer of design knowledge in “developing countries” or “peripheral countries”.

For Gui Bonsiepe<sup>5</sup> in particular in South America, Design knowledge transfer projects should keep into consideration that:

*1\_ the socialization of strategic production tools (technologies) must be sustained by the elaboration of innovative projects characterized by a high value of use;*

*2\_ the import of external design ideas (design from other cultures) should be reduced to minimum [...];*

*3\_ the influence of foreign consumption models [...] have formed and deformed the (local) consumers conscience. New products should be introduced slowly and accompanied by information in order to let the (local) consumer to form an authentic conscience of their (local) needs.*

*4\_ it is important to socialize the design process in order to let workers (local community) participate directly as producers of (their) material environment [...]. (italic words are the authors writing)*

According to the Ahmedabad Declaration (1979) in India, Design knowledge transfer projects should aim:

*1\_ to understand the values of a society and to define a good quality of life inside its parameters;*

*2\_ to look for local solutions for local needs using local materials and competences and applying advanced technologies;*

*3\_ to build new values, to satisfy primary needs and to preserve the plurality of cultural identities.*

The typology of technologies that should be used and transferred to communities within these projects has also been an important topic of a discussion lead by the pioneers of Design knowledge transfer: V. Papanek’s belief in the use of “autochthonous technologies”<sup>6</sup>; G. Bonsiepe’s theory on “intermediate technologies versus appropriate technologies”<sup>7</sup>; K. Schumacher’s attempt to apply “intermediate technologies” and develop “vernacular solutions”.<sup>8</sup> However, the aim of this paper is not to investigate this specific matter.

These two examples do not aim to give and an exhaustive and omni-comprehensive picture of the past actions in the field of design knowledge transfer projects, but

<sup>5</sup> Text translated from the author taken from Bonsiepe Gui, *Paesi in via di sviluppo: la coscienza del design e la condizione periferica* in Storia del Disegno industriale 1919–1990, il dominio del design, Electra, Milano, 1991, pp. 252–269.

<sup>6</sup> Papanek Victor, *Design for the real world*, Thames and Hodson, London, 1972.

<sup>7</sup> Bonsiepe Gui, *Paesi in via di sviluppo: la coscienza del design e la condizione periferica* in Storia del Disegno industriale 1919–1990, il dominio del design, Electra, Milano, 1991, pp. 252–269.

<sup>8</sup> Idem.

merely aim to underline the importance that Design knowledge transfer projects have had in the past and to stimulate an international discussion on the meaning of these projects in today's new economic and geopolitical paradigms.

Summarizing, we can affirm that design fits into the processes of globalization with tools and methods developed in the discipline, which allow:

- to understand the **cultural contexts**;
- to understand the **technologies** (i.e. understand what the specific skills are);
- identify the **consumption contexts** (in terms of new markets, new consumption scenarios).

This approach relies on the belief that this project can create more knowledge and innovation. Specifically, the project developed with the Paraguayan community has moved on two levels:

– **Promote greater access** by local artisan and industrial associations to international relations to create a virtuous circle between the exchange of knowledge and mutual recognition while keeping the strategic aspects of production “at home”.

– **Promote projects** between “hybrid cultures” capable of generating sustainable design scenarios for all those involved.

## 4 Paraguay. Places Need to Improve Local Products

A tacit phenomenon that goes beyond any study or possible schematization, but in which the ability of the designer to interpret the needs of the interlocutors and transform them into tangible responses, is combined with the ability to interpret multiple cultures, capture values, signs, traditions and customs to translate them into innovative solutions<sup>9</sup> for the consumer; this has been the basis of the most complex project implemented in Paraguay in the cities of Pilar and Yataity.

Why in Paraguay? First of all, because in that context there is a lot of small micro craft's company where work-only women whose skills in manual embroidery are of the highest level. Second, because, in a society still strongly focused on “machismo”, women as person, their rights, their needs, are still not respected and, sometimes, the same job becomes a “servility forced” because it is the only income's source for the family. These premises are, therefore, necessary to better understand the responsibility of the actions of both training and workshops: design as a tool not only for training but for “awareness of a work”. The manual work becomes the fulcrum of knowledge and the “respectability” of women itself and the products represent their skills.

In this case, not only was the training status of the trainers who had attended the course in Milan monitored and verified but also a real project of territorial and social valorization was carried out.

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<sup>9</sup> In Conti G. M., Galli F., Pino B., op. cit. Pag. 182.





**Fig. 1** Start of the design workshop in Pilar and first moodboards, Paraguay

At the headquarters of the City Hall in Pilar, a design workshop was created that, after the modification of three wedding dresses (received as donations from the IILA and used as a basis for the development of new design ideas), integrated elements of the culture Paraguayan in the form of embroidery, new volumes, different portability (Fig. 1).

The workshop allowed the 55 artisans involved to participate while respecting their work hours. After a practical demonstration on the actions to be carried out, the management and redesign of the bridal garments were in charge of the artisans, monitoring the design activities and the transformation phases of the clothing (Figs. 2 and 3).

The objective of this workshop was to elaborate together with the artisans involved, the project of the renewed garment to enhance their skills of clothing, embroidery and manuals in general, so that they could understand the “value”, understood not only from an economic point of view but also from their skill. The designer by nature finds himself having to communicate with people with different knowledge both when he is involved in a project with a single company and when he assumes the role of “facilitator” for the production fields. In this context, the designer must use the hermeneutical skills to interpret the different languages to build a shareable



**Fig. 2** The design workshop in Pilar, Paraguay



**Fig. 3** Reviwe’s chatting and first results in Pilar, Paraguay

third party and to drive the reference system towards innovation.<sup>10</sup> It is then when the designer becomes a “mediator of knowledge”,<sup>11</sup> a production orchestra director, an attentive observer of the forms and work processes, in order to enhance the full potential of production, based on what is done and that is not only dedicated to creating always new forms.

## 5 Some Final Considerations

Italian design is recognized as the engine of innovation for small and medium-sized Italian companies and “Made in Italy” represents the success of companies in the production of products with a high level of qualitative excellence in materials and finishes. Furthermore, it is a “meta-brand” identified mainly in the furniture, textile and clothing sectors capable of describing the Italian production system, describing lifestyles, quality, ethics, creativity. The designer is a professional capable of identifying and enhancing all the endogenous and exogenous conditions by fusing them to create innovative products.

So the designer becomes a “knowledge broker”,<sup>12</sup> an orchestra conductor, a careful observer of the ways and processes involved, so as to exploit the full production

<sup>10</sup> In Conti G. M., Galli F., Pino B., op. cit. Pag. 182, Zurlo F. (1999) Un modello di lettura per il Design Strategico. La relazione tra Design e strategia nell’impresa contemporanea, Dissertazione di Dottorato di Ricerca in Disegno industriale, XI ciclo, Politecnico di Milano, p. 162.

<sup>11</sup> In Conti G. M., Galli F., Pino B., op. cit. Pag. 182, Auricchio [1] Internationalization of design research and education centers. Promotion of international design networks, Dissertazione Dottorato di Ricerca in Disegno industriale, XX ciclo, Politecnico di Milano, p. 13. Per approfondimento si veda anche [4] *Milano distretto del design*, Il sole 24Ore, Milano.

<sup>12</sup> Auricchio [1] Internationalization of design research and education centers. Promotion of international design networks, Dissertazione Dottorato di Ricerca in Disegno industriale, XX ciclo,

potential, based primarily on what can be done and not only involved in creating new forms.

The experience with all the participants of the course and with the Paraguayan artisans, in their territory and with their instruments and their wisdom in the “know how”, was above all a human adventure in which the designers have tried to improve the normal skills of the artisans beyond repetitive experiences, proposing to express a creative freedom in what is usually processed in a “mechanical” way. This type of design model leads us to the reminiscence of the “theory of the de-equilibrating system”<sup>13</sup> by Ugo La Pietra in the 60 s, which is based on the possibility of intervening in the “rigidity of a system”, in order to reveal the contradictions and/or open it to new expressive possibilities.

Especially in the workshops in Paraguay, it is possible to summarize the activity<sup>14</sup> in:

\_ **understanding.** From the encounter with the artisans, to the participation in the phases of reworking, dismantling, re-assembling existing garments;

\_ **action.** The designer carried out some first seminary activities and, later, interaction with the craftsmen so that, implicitly, the two working methodologies could meet and confront each other;

\_ **consolidation.** Those are the activities developed between artisans and designers directly in the product.

We can talk about valuation strategies that provide a system of artisanal knowledge, with a formulation-oriented approach, so that objects become icons and witness the origins of all cultures. The strength of these objects is expressed through the ability to project future influences into a present that fascinates with the intensity of its history.

This type of design action has determined cross-fertilization between the design methodologies that have led the craftsmen involved to redefine the goal of manufacturing and the designers to reflect on the methodological experience and on the relationship between design and craftsmanship. On this occasion, we want to communicate through designing the possibility of going out of one’s “way of doing” to learn another or to integrate one’s knowledge with other skills.

Another objective was to communicate to the participants of the territory, both the commercial value and the strategic value of the recovery and the improvement of the textiles as a plus identity. In this case, we can say that design represents the interface between tradition and modernity, at the moment in which it reconfigures the codes of tradition to make them coherent with the languages of contemporaneity.

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Politecnico di Milano, p. 13. Per approfondimento si veda anche [4] Milano distretto del design, Il sole 24Ore, Milano.

<sup>13</sup> La Pietra [13] *L'artigianato per l'industria*, Artigianato tra arte e design, Edizioni Imago International, Milano, p.18.

<sup>14</sup> In Conti G. M., Galli F., Pino B., op. cit. Pag. 183.

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