Abstract

Library settings architectural design has the highest evolution in the third millennium due to its close relationship with science and knowledge and continuous changes of mankind science and knowledge concepts. This research aims to investigate library settings architectural evolution in the third millennium. Current research method type is descriptive analysis and it is analyzing the architectural design content of the libraries which are designed in the third millennium and it has applied library studies tools. The results of this research show that in library settings architectural evolution in the third millennium things such as moving toward transparency, decreasing settings, apply the settings with multi-application, creating visual rich images, creating the system which is based on environment and ecosystem, emphasizing on information, changing the wall spaces to the source of information, applying curve surfaces and continuous creation are considered. The results of this research can be applied for grasping library settings architectural evolution and implementing it in designing contemporary library settings.

Keywords: architectural design, designing evolution, third millennium, library, space

Introduction:

The only thing that can be found today is modification and transformation (Backhard and Pertichard 1382, 25), the libraries are affected by social, political, cultural, industrial and technological evolutions. – Salari, Mahmood 1384, 110 – the appearance of science and technology progression in designing libraries (the institutions which lead in informing people) settings architecture should be emerged and developed. – Dr Aaron Byerley, 2009 – in accordance with science and knowledge evolution and based on current situation, if in agricultural era the arm strength is considered as an important factor for remaining and in industrial era tools and machines were playing the same role, in current era which is the product of ICT and Marshal Mak Lohan called it world village and Castells also called it information era, all global set ups are severely related to information era set ups with electronics and digital insights and also they have relationship with each other in global unite village. The severity of transformations aligned with the changes in book concept and also the emergence of Nano technology and digital phenomenon cause various deformations to visual structure of libraries. – as a sample you can refer to Marie Francoise Bisbrouk 2006 – on the other hand the evolution of libraries setting structure and its appearance can be discussed concurrently of libraries architecture appearance evolution. In environmental psychology the satisfaction of constructed setting is considered as the most important factors in applying spaces and the endurance of its application. Today, internal design is taking attention of library architectural designers. – kose dogan, 2015 – according to the fact that a place is created by a combination of structural features, activities and definitions (canter, 1971) the concept of designing in academic libraries has been influenced by a deformation process. – Both, Heitor, Medeiros, 2013-

Stating the problem

The library architectural settings have deformed over the time. Based on the fact that the main duty of library building is providing library complex site, supplying enough space for staff section and their activities and preparing acceptable facilities in a way that you can use the library complex. – Mokhtar Mmemar, 13, 101, the library architecture, translated from encyclopedia Britanica, 1993, vol 13, pp. 954-956 – and according to the fundamental transformation of knowledge span, tools and technique in the third millennium, this paper will investigate these modifications in designing contemporary library settings design. – Lord Macintosh, Rt. Hon, 2008 –

Research objectives
The general objective of this research is to study libraries structural settings evolution, structural settings capabilities of libraries application in the third millennium.

**Research’s main question**

What are the directions of library settings architectural evolution in contemporary era?

**Research hypotheses:**
Designing library settings in digital and electronics era has special principles and solutions.

**Research methodology**
This research is considered as descriptive analysis type and the library studies are applied for investigation.

**Data gathering method:**
1. Studying the written documents of library settings architecture in contemporary era by emphasizing on the third millennium
2. Library study method by deducting from interdisciplinary topics of librarianship management, architecture engineering, urban engineering and combining analytical deduction methods

**Research background**

Despite the importance of structural setting of library settings, unfortunately a few researches are done in this field by Iranian scholars. Some researchers are discussed their ideas about libraries structural settings transiently and briefly which some of them are as follows:

Hossein Mokhtari Memari translated ‘The Library Building Architecture’ from Britanica encyclopedia and issued it in Payam publication (spring and summer 1373, 4th year, No. 1 & 2, pp. 101-104) and investigated about primary library building architecture. It is necessary to mention that as the source is back to 1993, the essentiality of revision is required in this field.

Parviz Azem the supervisor of Hosseinniyeh Ershad library also translated the paper of David Casser ‘the design of preparing library building plan’ and issued it in Payam publication (3rd year, No. 1, pp. 12-17, spring 1372)he suggested librarians to perform building design stages in cooperation with architecture team and other professional practitioners of building plan and design.

This topic is investigated a lot outside Iran.

Dr. Aaron Byerley performed a research in Institute for Information Technology Applications of United States Air Force Academy in cooperation with Future Library Committee in 2009. He mentioned general views about future library design. – Aaron Byerley, 2009 –

Mary Louise Jensen 2002 is discussed about 10 stages of designing public library in a book which was titled ‘Library Space Planning Guide’.

Andres C. Dahlgren in a research which was titled ‘Public Library Space Needs: A Planning Outline’ and issued in 2009, investigated step by step planning design for public library in 8 stages. - Andres C. Dahlgren, 2002 –

Philip Barker in a paper which was titled ‘Electronic Books and Future Libraries’ and translated by Ali Mazinani in Payam publication (4th year, No. 3&4, pp. 87-99) is discussing about the necessity of deforming library settings proportional to electronic books.

Panlibas publication (spring 2010, No. 16) is discussed about librarians’ point of view about future libraries architectural design in a paper which was titled ‘Future of Librarians Architects’ Perspective’.

Karen Erickson, Natasha Kurtz and Ben Szalewics in a research which was titled ‘Green Building Case Studies North Adams Public Libraries’ and supervised by Dan Anderson and performed in Northeastern Architecture College (20th march, 2010) stated the applying and recycling methods of energy and also discussing about optimal heating system and applying photovoltaic solar cells I designing this library.

E-books and future libraries
Computer and information revolution opened a new window toward our life. The emergence of electronic media has changed the community from a mechanical, objective, simple and visual print to an electronic world which is attractive, complex, cooperative, immediate and acoustic. – Hoorax, 1381, 15-
Concurrent electronic connections are not only for transferring data and information but also their existence change our life structure. – Giddens, 1999, 3) computer is considered as a media for stating and forming people behavior. – Therlo Lengel, 2004, 16- 21st century has entered into a new era by applying architecture and the mechanical motto for Le Corbusier life – modernist famous architect of 20th century and the most well-known beginner of modern theory in contemporary architecture – and actually the evolution of industrial society production was in the first half of 20th century. Electronics era has three features as follows: non-materiality, sensuality, being multimedia. – Joodet M., 1380, P.18 –

In third millennium professional informationists are faced at minimum with three major deformations. Passing through paper media into electronic ones, increasing demand for accountability, modern organizing types – Pinfeld, 1378, P.62 – following factors are suggested to design library in the third millennium and 21st century. Consider library as a second home, regard it as a window toward the world, availability of a library and etc. – Worpole Ken, 2003, 13 – suppose library as a public site, finding a method for librarian, designing by applying current technology of the world – Haman, 14 – applying advanced technologies in libraries – Sharif, Moghaddam H, 2006, p.85- applying new visual information in servicing libraries – ibid, p.87 – intensity of technologic development in future libraries building – ibid, p.88 – forecasting for future libraries building – ibid, p.88- Dr. Aaron Byerley and future library committee suggested 8 items in a report which was titled ‘future library’ for designing future library setting.

Establishing world class library with the accessibility to resources from inside and outside library setting
Supporting studying groups
Applying inspiring scenes to create inspirational settings for suitable study
Improving and promoting natural and artificial lighting
Improving and completing acoustic and visual multimedia supporters
Establishing social skills center for exercising oral, written, visual and acoustic presentation reports with the possibility of copying, printing and scanning
Improving performance arrangement for library with the possibility of concurrent accessibility to office and house for users and librarians
Creating a suitable library setting to welcome users by providing convenient furniture with appropriate colors and a coffee shop
Marie Francoise Bisbrouk in a Liber ISI publication paper which analyzes library designing architecture race in Swiss announced some desirable features for designing library in contemporary era. Accessibility to educational centers, perception and remembering of memories in a library building, the number of levels and legibility of services, relationship with services diversity, appropriate vertical and horizontal performance of levels, take advantage of day’s light, library security, easy keeping and easy accessibility.

Rt. Hon Lord McIntosh is named features which can be used for future public libraries. Future libraries should be developed in collaboration with other sections. (second article) compatibility to internal design and moving systems and accessibility and servicing hours (third article) library should be a key communicating center for people who are moving (fourth article) considering supporting facilities for long term staying of the users and for their convenience (sixth article) the electronics connections between houses and libraries should be developed (seventh article) developing kids services section in a library in a way that electronics information security and other securities are considered (eighth article) library virtual service department should be provided 24 hours of a day (ninth article) librarians should modify their rules from cultural guards to knowledge navigators. (Tenth article)

Pat Noon stated following factors for library buildings sustainability. Regard a library as a thing that is more than a building, the effect of architectural beliefs, new view to a library, speaking to architectures, design flexible settings, sustainable energy application
Paul Johnson announced following factors in designing Singapore national library. Taking attention to library setting in integrated education issues, holding an exhibition at the ground floor of a library, adaptability, connected façade and eco-efficiency
Khayashar Kashani Joo also in paper which was titled ‘Architecture in Information Era’ believes that buildings architecture that is the result of electronic and digital revolution is categorized into 5 major building groups that the fifth group is new information centers which are equipped with multimedia equipment and attractive computerized appearance.

Another important factor is the possibility of applying Nano technology. The largest design for future library settings will be the smallest one. (Limet et al., 1380, 16) it is clear that the comprehensive effect of Nano
technology on man’s life and the way of his relationship with environment and buildings is unavoidable and unimaginable. Protective shins against sunshine, invisible walls and self-replication structure are will be accessible. - Elvin 2003, p100-105- in 21st century the possibility of applying Nano technology has created new horizons in library settings creation with the highest flexibility and the highest compatibility with environment. Besides that new material accompanied by Nano technology can lead to new facilities for completing and improving architectural settings and can make you think about new form of life. – Rennie 2000,8 –

![Figure 1 Interaction of integrated factors of library science and architecture (K. JAKOVLEVAS-MATECKIS, L. KOSTINAITE, J. PUPELIENE, 2004)](image)

**Activities in libraries**

In a behavior setting, activity will be combined with social, psychological, physiologist and structural factors. The place like a library is defined by the system of activity related to a setting which an activity is taking place in it. According to different designs the most important activities difference in library settings are in public and individual arena, appropriate performances, social interactions, activities concurrency for library users, the compatibility of settings with performances, no interference of individual and group performances, appropriate settings dimensions, physiologic convenience and easement status and users satisfaction of library designed structured settings. As cultural backgrounds can influence individual activity direct and indirectly, the settings can’t specify behavior, – Mortazavi, Shahrnax, 1380 – but it can neutralize, prevent or facilitate a special behavior. – rapaport, 1990, 143 – interactions and activities happen in a covered place or sometimes in open spaces such as library yards and site entry spaces. Users support is initiated by people’s library selection and their behavior is maintained by stationary and semi-stationary elements such as furniture and non-stationary elements such as people and their behavior. – Barker 1968 – the relationship between people and inhuman components is a setting. In different scales the settings are different self-structures and they may consisted of other self-structures – wicker, 1984 – while, traditional psychological-ecological perspective take a little attention to ultra-boundaries conditions, in new theories there are more attention to contextual factors role such as culture, economic conditions and memories. In general, library is consisted of a couple of behavioral settings that their features are:

1- Orientation  
2- Book outline  
3- Book shelf  
4- Reading  
5- Relaxing  
6- Book departure control
7- Leaving – T White Edward, 1388, 90 - , frequency of activity occurrence in library; Low book shelf, Reference resources, Magazines, High inspections

The current pattern of behavior in library: the most important current activities in library setting are studying, book reading and borrow books and other activities which are related to books and studying books. The period of applying library: according to the library type the highest daily activities are in administrative hours and sometimes continued till 4 PM and in special days it is performed based on a pre-specified plan. Library structural special setting: the most important library structural settings. Library plan: studying and book borrowing is the stationary activities of library. The controlling factors in library: silence in library setting, non-interference of activities in library settings and library management is considered as a controlling factor in library setting. Self-structured: there is a difference between structured setting and activities in library and also self-structured of people and libraries settings. These differences are effective on people satisfaction, dissatisfaction and convenience.

Social interactions in library:
In today’s world general life territory is synonymous to social life however the requirement of social life is identity and attachment to a group and individuals or sense of community. Gusfield 1975 announced two applications for community. One of them is for specifying territory and neighboring and the other is applying relative definition of community which means the feature of relationship among people without considering their status. He believes that these two applications are aggregative as Dureheim 1964 believed that the modern societies develop communities around activities and skills not around situations. Randall McMillan believed that social sense is a feeling which members have it because of belonging to a group and they influence other members by applying it. The sense of community is a faith and common belief which meet members’ needs by commitment to each other. This definition has four major bases of membership, effect, amplification and emotional factor. – McMillan, 1986 – Doolittle and McDonald 1978 announced 4 topics for site scale which they are practical for social behavior investigation, the type of attitudes toward community and social organizations application and the basic of these scales are called community structure dimensions criteria. – McMillan, 1986 – in library, the activity, cooperation and collaborations are not just related to tools and obvious aspects but also it consisted of conceptual and hidden aspects of library setting, As Rappaport 1990 considered the concept of hidden performances. These settings are capable of creating mental images, identity and quality of environment. Individuals’ homogeneity, common targets and site proximity are also effective on interactions and collaborations. Other factors such as facilities, dimensions and structural identity are also impressive on applications, activities and group cooperation.

<table>
<thead>
<tr>
<th>CONTRIBUTING TO CAMPUS LIFE</th>
<th>DESIGNING FOR CONNECTIONS, HONORING ENDURING LEGACIES, BRIDGING BUILDING AND LANDSCAPE, SUPPORTING COMMUNITY EVENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>STUDENT-CENTERED LIBRARY</td>
<td>CATERING TO EVERY TYPE OF LEARNER, LEVERAGING TECHNOLOGICAL INNOVATIONS, SUPPORTING SERENDIPITOUS DISCOVERY, HOUSING AND ACCESSING INFORMATION</td>
</tr>
<tr>
<td>GATHERING</td>
<td>CREATING SPACES FOR COLLABORATION, STRENGTHENING DISCOURSE, NURTURING BODIES AND MINDS</td>
</tr>
<tr>
<td>SERVING</td>
<td>CONNECTING USERS TO RESOURCES, OPTIMIZING SELF-SERVICE OPTIONS AND MOBILE NAVIGATION, ACCOMMODATING LIBRARY STAFF, BUILDING ON STUDENTS’ STRENGTHS, OPERATING AROUND THE CLOCK</td>
</tr>
<tr>
<td>Architectural space</td>
<td>COLLABORATIONS, DESIGNS WITH PURPOSE, DESIGNS WITH PURPOSE, New kinds of work need dynamic new spaces, Government: Doing more with less, Media: Still a studio at heart, Innovation depends on exchanging ideas, No surprise, education is experiencing big changes, Mixed Use, Entertainment has to connect, Taking an experiential approach, Maximizing return on experience, DESIGN FOR SOCIAL SUSTAINABILITY, Day lighting: Natural Light in Architecture, Beyond Physical Spaces, Technology Changes Traditional Information Forms, Technology and Infrastructure, Library as a Stimulating Environment, Functionality and Flexibility, functional,</td>
</tr>
<tr>
<td>Location</td>
<td>Country</td>
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<td>--------------------------------</td>
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<tr>
<td>Southbank Library</td>
<td>AUSTRALIA</td>
</tr>
<tr>
<td>Biblioteka Viva Biobio</td>
<td>CHILE</td>
</tr>
<tr>
<td>Biblioteka Viva Sur,</td>
<td>CHILE</td>
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<tr>
<td>Biblioteka Viva Tobalaba,</td>
<td>CHILE</td>
</tr>
<tr>
<td>Hjoerring Bibliotek</td>
<td>DENMARK</td>
</tr>
<tr>
<td>Stadbibliotek Stuttgart,</td>
<td>GERMANY</td>
</tr>
<tr>
<td>National Library</td>
<td>GREECE</td>
</tr>
<tr>
<td>Deichman Ske Bibliotek,</td>
<td>NORWAY</td>
</tr>
<tr>
<td>My Tree House, World’s first Green Library for kids.</td>
<td>SINGAPORE</td>
</tr>
<tr>
<td>Library @ Orchard</td>
<td>SINGAPORE</td>
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</tbody>
</table>
a local polytechnic (Singapore Polytechnic). NLB worked closely, with the students and lecturers through design thinking to capture user needs through in–depth, interviews and built user personas to brainstorm ideas for prototyping.

<table>
<thead>
<tr>
<th>Institution</th>
<th>Country</th>
<th>Year</th>
<th>Design Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clementi Public Library,</td>
<td>SINGAPORE</td>
<td>2011</td>
<td>Image and Identity: Flexibility and multifunctional; Order and orientation; Accessibility; Collection layouts; Shelving and display; Furniture and fittings; Service desks; Signage and wayfinding; Furniture and fittings; Marketing and branding; Lighting; Health and Safety.</td>
</tr>
<tr>
<td>Library@Chinatown</td>
<td>SINGAPORE</td>
<td>2013</td>
<td>Image and Identity: Order and orientation; Accessibility; Collection layouts; Shelving and display; Furniture and fittings; Signage and wayfinding; Marketing and branding; Lighting</td>
</tr>
<tr>
<td>Sture Bibliotek</td>
<td>SWEDEN</td>
<td>2009</td>
<td>Flexibility and/or multifunctional; Smart technology; Shelving and display; Furniture and fittings; Ecologically sustainable design (ESD); Lighting; Other – Small library that many people can visit in a rush on their way to and from the metro.</td>
</tr>
<tr>
<td>Umea City Library</td>
<td>SWEDEN</td>
<td>2014</td>
<td>Image and Identity: Flexibility and multifunctional; Order and orientation; Accessibility; Smart technology; Collection layouts; Shelving and display; Furniture and fittings; Service desks; Signage and wayfinding; Marketing and branding; Public Art; Ecologically sustainable design; Lighting; Acoustics; Health and Safety.</td>
</tr>
<tr>
<td>De Nieuwe Bibliotheek Almere,</td>
<td>THE NETHERLANDS</td>
<td>2010</td>
<td>Image and Identity: Flexibility and multifunctional; Order and orientation; Accessibility; Smart technology; Collection layouts; Shelving and display; Furniture and fittings; Service desks; Signage and wayfinding; Marketing and branding; Public Art; Ecologically sustainable design; Lighting; Acoustics; Health and Safety. They are all essential for a modern library.</td>
</tr>
<tr>
<td>John Gray Centre,</td>
<td>UNITED KINGDOM</td>
<td>2012</td>
<td>Image and Identity: Flexibility and multifunctional; Accessibility; Smart technology; Collection layouts; Shelving and display; Furniture and fittings; Service desks; Signage and wayfinding; Marketing and branding; Public Art; Ecologically sustainable design; Lighting; Acoustics; Health and Safety.</td>
</tr>
<tr>
<td>Anythink Wright Farms,</td>
<td>UNITED STATES</td>
<td>2010</td>
<td>Image and Identity: Flexibility and multifunctional; Accessibility; Smart technology; Collection layouts; Shelving and display; Furniture and fittings; Service desks; Signage and wayfinding; Marketing and branding; Public Art; Ecologically sustainable design; Lighting; Acoustics; Other - Creating beautiful spaces that are intended to make the customer, feel comfortable and empowered is critical. Our library is filled with touch points that support our new, image and brand.</td>
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</tbody>
</table>

Table 2: the most important elements of architecture design of some of the most important 3rd millennium libraries

Source: Laerkes, Manolis, 2013

Data analysis
Hypothesis test: designing libraries settings in electronic and digital era has special principals and procedures. By examining theoretical foundations and topic literature it can be summed it up that in designing public libraries settings in digital and electronic era the most important principles which are fundamental are as follows:

- Moving toward transparency
- Decreasing settings
- Using settings which are multi-application and flexible
- Creating rich visual images in internal and external settings of public libraries
- Discipline which is based on environment and ecology
- Emphasizing on information and changing the wall spaces into information reservoir.
- Applying curved surfaces
- Applying continuous creation approach in designing library settings by implementing virtual technologies
- Applying Multimedia and developing application in public libraries settings
- Emphasizing on creating green space in a creative manner inside and outside libraries
- Users’ collaboration in library setting
- The capability of having communication to work office and house from library setting for users and librarians
- Emphasizing on suitable and appropriate use of day’s light
- Emphasizing on using sustainable energy and applying recycling energy consumption and production cycle in library
- Applying intelligent settings and materials by implementing Nano technology in public libraries settings materials

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Based on mentioned factors it is obvious that optimal and sustainable design of library settings in the third millennium needs consultation and companionship of interdisciplinary sciences with presence of practitioner librarians. On the other hand, the success in implementing the mentioned principles in designing libraries setting in 21st century is required the perception of new knowledge and sciences in fields which are related to public libraries design. The application of all 14 mentioned factors or multiple combinations of them are used in successful public libraries settings of 21st century.

<table>
<thead>
<tr>
<th>Type of evolution</th>
<th>First effects</th>
<th>Second effects</th>
<th>Effect on urban area</th>
</tr>
</thead>
</table>
| Change in library servicing by decreasing settings     | Decreasing the needed foundation  
Increasing services quality and their type in a virtual form and small space | Decreasing settings  
Diversity of provided services in virtual reality  
Applying nanotechnology | In future city and existence area the informing centers will be smaller but more than today |
| Deforming library general system and creating a system which is based on environment and ecosystem by maximum utilization of green space inside and outside library | Developing green spaces in library settings  
Create and diversify green spaces views in library settings  
Implementing sustainable development  
Moving toward creating and applying new and clean energies such as solar energy in all levels of energy consumption in library  
Create and keep environment recycling cycle in designing library |                                                                                         | Urban ground public ownership, urban management and plan implementation will be improved |
| Consolidating various applications and create multi-application library settings with capability of flexibility and deformation | Try to create library setting as a second home  
Try to consolidate library setting with user's office and home settings  
Creating flexible library settings which can be modified proportional to today knowledge |                                                                                         | Eliminating a lot of current applications                                               |
| change qualitative and quantitative aspect of communications in terms of visual, acoustic and multimedia or methods which are based on IT | Developing qualitative and quantitative communications of public libraries settings based on IT system  
Stabilizing and developing multimedia systems in all affairs of public libraries and inside and outside their settings  
Moving toward multimedia system which is based on IT |                                                                                         | Moving toward creating a multimedia system which is based on IT                        |
| Emphasizing on transparency                            | Emphasizing on maximum transparency of inside and outside façade of public library settings and also in walls designed skins  
Paying attention to visual view development in public libraries settings  
Transparency of physical structure and virtualized structure of public libraries |                                                                                         | Transparency                                                                            |
| Creating visual rich images                           | Applying images development and creation discipline inside and outside public libraries  
Informing and noticing by applying visual system |                                                                                         | The system which is based on creative visions                                           |
### Focus on renewable energies

| in a physical and virtualized status in public libraries | In alignment with sustainable development objectives: Applying clean energies such as solar energy and wind for public libraries settings Try to apply day light at a maximum level and creating the capability of reserving day light for night consumption in libraries setting The maximum application of recycling system which is based on ecosystem in public libraries | Moving toward sustainable development |

### Users collaboration

| The maximum collaboration of users in public library settings Attracting users' presence in public libraries settings by creating desired things for users in public libraries Combining learning, informing and noticing setting for users by applying multimedia entertainment | Users' collaboration |

### Intelligent settings

| Applying intelligent settings and materials by implementing nanotechnologies in public libraries settings material Creating intelligent system with the capability of informing in public libraries settings and with abilities of continuous updating from worldwide web Using walls as an information reservoir in public libraries | Applying intelligent settings and materials by implementing nanotechnologies in public libraries settings material Creating intelligent system with the capability of informing in public libraries settings and with abilities of continuous updating from worldwide web Using walls as an information reservoir in public libraries | Developing the settings which is based on intelligent informing |

Figure 1 library structural settings evolution due to information technology infrastructure in the 3rd millennium

### Conclusion

The investigation of contemporary library settings architecture represents the emergence and presence of strong set ups which are based on 3rd millennium information technology infrastructure. Deformation in libraries services accompanying by decreasing settings, change in general library discipline and creating a system which is based on preserving environment and ecosystem by applying green spaces inside and outside library settings, consolidate various applications and multiple library settings applications with the capability of flexibility and modification, change qualitative and quantitative aspect of communications in terms of visual, acoustic and multimedia or methods which are based on IT, emphasizing on transparency, creating rich visual images, focus on renewable energies, users cooperation and intelligent settings are important and major factors which are pointed out in investigating library setting architecture evolution.

### Suggestions for future researches

According to the documented results of this research, following options are proposed for interested scholars and researchers:

- Investigating the mutual effects of architecture knowledge and librarianship science in designing optimal public libraries settings
- Examining and analyzing urban public libraries model by considering digital and electronic architecture concepts
Resources

Ark Pamela el et al., 1380, survey research textbook, translated by Mehr Andookht Nezam Rashidi et al., Agah Publication, Tehran

Bachhard Richard and Pertichard Vandi, 1382, evolution and innovation management, translated by Mehdi Iran Nezhad Parizi, Modiran Publication, Tehran

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