

Urban Conservation of Fez-Medina: A Post-Impact Appraisal

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Introduction

It would sound strange in the 1970s if the term 'post-impact' was mentioned, as far as conservation is concerned. Broadly speaking, conservation signifies archeological preservation of valuable objects that may likely become extinct. Today, it goes beyond a mere celebration of an historical icon. The pressure of human needs in urban heritage sites has widened the scope of conservation in order to go in tandem with social and economic development.

Conservationists came to realize that their task of scrutinizing stones and cleaning surfaces is negatively affected by a dearth of funding. The pressing need of the people whose heritage is a living and not a static legacy is consequently dashed.

The changing dimensions of the significance of conservation have divided opinions among conservationists into two. One opinion maintains the classical dimension while the other includes economic development in conservation. However, both dimensions are essential. The evolution of a new framework which will appeal to both opinions and at the same time guarantee the continuous existence of heritage sites is imperative.

Urban heritage sites have their peculiar development potentialities, the sustainability of which should not be allowed to be altered by any negative or positive intervention from outside. It is this sustainability that Richard S. Levine describes as the 'nested realms' of social and cultural magnets that make an historic city a vibrant one.^[1] To achieve this there should be a defined vision before implementation of physical projects is embarked upon. However, this vision should not be assumed to be a mere parachuted idea or complex equation but rather a holistic approach which can be translated into action in the conservation strategy.

The planning theories that forecast what a city should look like in the next two or three decades no longer stand today. Therefore, instead of spending much time on preparing a long-term urban scenario, a less time-costly alternative is now being discovered by planners. This alternative is learning from best practice and averting the risks and errors observed. As each urban site has its peculiarities the array of their vast problems should therefore be considered.

This paper discusses and brings into focus the model of best practice, taking the conservation of the historic city of Fez as a case study. This, however, does not imply that a model of best practice is the most superior or is error free. It is, instead, that which faces many difficulties and constraints. It is the solutions found to overcome these difficulties which make conservation a success and with maximum positive outcomes.

Fez, a World Heritage City

Fez is the spiritual, scientific, and cultural capital of Morocco. It was founded by the Idrissid sultan, Idrissid II in 808 C.E. The importance of its medina is reflected through several factors:

- A unique geographical site with abundant springs, rivers, and landscape.
- A vast geographical area that covers an area of around 800 acres.
- A large number of historic buildings (about 13,385).
- A large number of historic monuments (about 3,000).
- An intact pedestrian structure throughout centuries.

- A long historic wall of around 20 kilometers.
- An historic university, which is considered as one of the oldest universities in the Islamic world: the Qarawiyyin.
- A dense medina: 800 to 1200 persons/hectare.
- A most active historic site with vibrant artisanship.
- A most sophisticated built environment with an architectural and urban intricacy.

These factors, and the dynamic urban evolution, render Fez a unique Islamic capital. Its original and age-old urban environment still survives despite the pressure of modernization and industrialization. The intact physical environment of Fez presents an unaltered Islamic city, which provides a rich ground for researchers and visitors who are eager to unravel the roots of Islamic civilization. The amalgamation of the social, cultural, spiritual, political, and economic elements forms a coherent urban system that has survived through centuries. The magnificent heritage of Fez is the embodiment of its excellent legacy. Accordingly, Fez is a city of its inhabitants, who have guaranteed its existence as their bequest to urbanism. Fez was listed as a world heritage city by UNESCO in 1981.

The Rise of a Conservation Vision

The momentum for conservation of the historic Fez was initiated by a local team that believed in the sustainability of the city as a living and breathing built environment in collaboration with a small team of UNESCO consultants, which was led principally by a talented architect: Titus Burckhardt. This team of Moroccan professionals, who were trained in France, recognized the utter decay of the medina in the aftermath of colonization. The first outstanding document produced by this team was the first *Schéma Directeur d'Urbanisme* of the city of Fez in 1975. This document laid the solid foundation for the launching of the International Campaign for the Safeguard of Fez in 1976 in Nairobi.

The vision of this team was to rejuvenate the heritage of Fez through the improvement of the living conditions of its inhabitants. It also made the historic medina the core of the whole urban agglomeration of Fez with the projection of its urban extension in the east. Although this document could not be implemented in its totality, its major parts relating to the development of the historic medina were maintained. It projected a rehabilitation process through three lines: social and economic development, insertion of urban facilities, and rehabilitation of housing.

The current rehabilitation program has followed along these lines in order to shape comprehensive projects which aim at upgrading the entire medina, to ensure that the process is not distorted by a set of pilot projects for the development of one area at the expense of others. Thus, the challenge has been to solve root issues and not to emphasize superficial actions such as the polishing of facades for a mere formal inauguration. The insistence on doing so put the local team of conservationists under continuous pressure by top political stakeholders. Nonetheless, their determination and wise conflict management has led the conservation program to reach an unprecedented resolution of contrasting concepts and views about how the conservation should attract different partners positively.

In this regard, the vision needed leadership and field expertise to be met. Fez is among the rare cases that presented a sound grass-roots conservation strategy which many other historic sites in Morocco and elsewhere emulate. The quintessential point of this strategy is described by Fouad Serrhini in these words: "The [backbone] of the success of the conservation of Fez derives from a philosophy and a [brilliant] reflection of history, culture, heritage, society, and the resolution of the inhabitant's daily problems in the medina."¹²

This discourse is difficult to understand and articulate, and is challenging to implement. Nevertheless, the continuing efforts on significant projects, and the reactions of the inhabitants, have taught the conservationists about the political and financial opportunities that produce the maximum positive impact. This serves as an inherent orientation for the conservation process to adopt constructive means that generates a synergy for action.

While it is hard to formulate the vision of the conservation of the city of Fez in a set of words, for the sake of conveying a lucid message, it could be crystallized in the following concise statement: **The conservation of the**

heritage of Fez is an attempt to awaken the active history of the city, which encompasses all the positive intangible and tangible synergies, in order to catalyze its sustainability, in which its inhabitant is the vital player.

In addition, this vision was also derived from the nature of the historic Fez as the first Islamic city to be part of the international campaign for the conservation of unique human heritage. This was echoed by Mr. Amadou-Mahtar M'Bow, the former Director General of UNESCO:

...Nevertheless, it is by its very nature a campaign without precedent in the activities of UNESCO. It is the first campaign to be undertaken on behalf of an Islamic city. The operation to be carried out exemplifies, by virtue of its scope, one of the major challenges to which humanity must rise if it is to preserve and enrich its cultural heritage in the face of the constraints imposed on us by a process of accelerated modernization and industrialization. This challenge is of a nature to tax man's capacities and imagination to the full...^[3]

Conservation Management and Tools

The conservation program could not be launched without seeking adequate tools for its implementation. These tools range from the institutional, financial, to the technical, etc. They are as follows:

Institutional Montage

The conservation program of Fez was initiated first by a team of architects within a unit for conservation in the Housing Delegation of the city of Fez under the auspices of the Moroccan Ministry of Housing in 1976. This team was the first to consider the destiny of an ancestral medina that fell into a state of neglect and abandonment. The physical dilapidation of the medina, and the deterioration of its living conditions, had reached an alarming rate. Since the intricacy of the case of Fez provided the largest number of urban issues that a Moroccan city might present, some of these architects and planners eventually became top planners and decision makers in Morocco.

In 1982, a Delegation for the Safeguard of the Medina of Fez was created under the auspices of the Moroccan Interior Ministry. Although it was awkward for a conservation program to belong to a wing of an Interior Ministry, the national supervision of the *Collectivités Locales* (regional municipal councils) was centralized in this ministry. The Delegation was under the authority of this entity. This created, undoubtedly, a tension among the players who represented different government institutions, political entities, NGOs, and private institutions.

This Delegation had the mission to structure the conservation program through an administrative organization that would be the hub for the initiation of different projects in the historic Fez. The main outcome of this stage was mainly experimental, which generated the first feed-back on how Fez should be preserved effectively. With tremendous institutional challenges, the local team of experts maneuvered well in order to pursue the vision of conservation without submitting to the whimsical and sentimental choices of a rigid political hierarchy. Thus, the Delegation established the foundations of the conservation program of Fez. Its main role could be summarized in three points:

- Make the conservation of the city a planning issue and be part of the urban development of the whole city;
- Expand the scope of restoration and rehabilitation of monuments to be a catalyst for up-grading neighborhoods;
- Link between the governmental actions and the inhabitants' initiatives.

In 1989, the need to make this Delegation more efficient by moving it from the stage of diagnosis, research, and limited physical projects to the stage of implementing strategic projects for the city was met. The government decided to create a new institutional framework. This new framework was the creation of ADER-Fès (Agence pour la Réhabilitation et la Dédensification de la Médina de Fès) that is still operating now. ADER-Fès, a semi-private organization with public capital, had the task of generating funds out of *per-equation* projects, and acts as an inter-

governmental agency. Its board of directors comprised representatives from all Moroccan ministries concerned with the conservation and development of the city of Fez.

ADER-Fès could be viewed today as a unique agency that has been created exclusively in order to undertake the conservation and development of an historic city: Fez. Currently, its role in the planning and development decisions of the whole agglomerate of Fez is crucial. This is because it associates meticulous information about the city with the management of physical projects.

Financial Montage

The most crucial question is the financial resources for an operation of this sort. How was the conservation program of Fez able to generate funds for its projects? If the inhabitants are asked about this matter, some might even claim that a huge amount was donated by UNESCO, supposedly due to the role it played in having it listed as a World Heritage City. UNESCO has been very active in raising funds for the conservation of Fez, and its network of international experts participated effectively in shaping the local expertise of Fez, but UNESCO is not a financial institution. Being listed by UNESCO does not guarantee a site access to an easy financial resource. It is the primary duty of the national and local representatives of a heritage site to seek financial means in order to rescue it from decay and neglect.

The main source of financing for the ADER's operations is the Moroccan government. The different ministries participate financially in different programs following their prerogatives. However, if one considers the large number of projects implemented within the confines of the medina, the financial structure of the conservation program might reflect a very advanced participation of local authority, municipal councils, NGOs, national/international donors, and national/international financial institutions. This made the case of Fez the most successful in attracting resources to its conservation projects. This is because of the success of many implemented operations that left positive impacts on the environment of the medina.

While this positive impact has made the medina a better place, the increase in the number of foreigners competing over the purchase of historic houses may jeopardize the stability of the local community. Therefore, while ADER attempts to balance between the stability of the inhabitants in their neighborhoods through the improvement of their urban environment, and the new opportunities for investment that pose new challenges, there is an inclination towards the continuous ceding of the medina to the antiquarians of historic cities. Why antiquarians of historic cities? It is because the current international antiquarians have shifted from the acquisition of artifacts to the creation of a fervent market of buying and selling historic properties all over the world.

The local authorities encourage foreign investment in the medina, but at the same time are keen to control this investment in order not to destabilize the local communities. While the cases of Marrakech and Essaouira are thrilling in terms of the rapid improvement of their built environment, their local communities are completely ceding their medinas to a new community of mixed residents comprising people of different nationalities. These two cities would become rather a gentrified theme-park.

The positive and negative impact of this trend in Marrakech and Essaouira is a good example for Fez, which reveals more resistance in this respect. The structure of its community is still coherent with its function as a city. Therefore, PDRT (The Regional Program for Development of Tourism) is playing a major role in sustaining Fez as a cultural destination through different rich programs of improving and diversifying the tourism infrastructure in Fez and its region.^[4]

The challenge for heritage cities like Fez is how to make financial institutions invest in high value cultural and historic environments. In addition, it is how to engage heritage in economic development without endangering its non-economic value. To persuade the international financial institutions to fund development projects in a World Heritage Site is a challenge.

In 1993, Fez hosted an international colloquium on “The Financing of the Rehabilitation of the Historic Cities by Whom? How? And Why?” During the same colloquium the World Heritage Cities Organization (WHCO) was created officially. This event attracted many international financial institutions, and ever since the World Bank has shown interest in the participation in the development of historic cities.

Fez being among its first cultural projects, the World Bank needed to train its experts in the field of cultural heritage.^[5] Thus, Fez was among the cities that influenced the World Bank team to venture into heritage sites. Of particular mention is its former president James Wolfensohn who visited Fez several times before and during the tailoring of the project to be financed by a World Bank loan to the Moroccan government.

ADER-Fès, a well prepared agency for conservation and development, was the main interlocutor of the World Bank team in charge with the case of Fez. The project was entitled: “The Rehabilitation Project of the Medina of Fez.” This placed ADER-Fès in a strategic position with its signing of a Project Agreement directly and the World Bank and its role as an execution agency for the whole project. The importance of the Fez project, financed by the World Bank loan, is embodied in the exploration of local expertise in order to shape an integrated program that goes with the line of action of ADER-Fès, and not to step-over or undermine the local expertise. This was not an easy task for both sides, but an agreement was concluded on the necessity of such an ideal.

The global budget of the project was 126 million MAD (12.6 million USD [1999]), and covered the following components: Development of Programs that Encourages the Rehabilitation of Historic Buildings; Improvement of Emergency Circulation Network; Improvement of the Medina Environment; Exploration of the Rehabilitation Process to Eradicate Poverty; and Institutional Reinforcement. All these components were achieved in 2005, and the project has had a tremendous positive impact on the development of the medina of Fez. Although in terms of financial indicators, the achievement of a project of such a size is not always fully met, it has generated many synergies of actors and investors pursuing the lines of the components. This established a model in the level of practice of development in a conservation zone.

In addition to the World Bank loan, other financial actors participated in Fez such as FADES (Arab Fund for Social and Economic Development). FADES has been involved widely in the rehabilitation of the monuments, housing, and infrastructure of Fez. Its financial contributions were always through donations, and it has been among the few financial actors to venture into saving the rivers and water system of the old Fez. Private national and international donors supported the restoration of many monuments in Fez.

The large number of implemented rehabilitation projects in the medina of Fez has made it a successful case study, particularly in fund raising and financial investment in the heritage sector. Despite the fact that a historic city of 160,000 inhabitants could not be conserved or fully saved from danger, Fez is very advanced in the implementation of its vision of conservation compared to other historic cities in Morocco or in the Arab World.

The different investments made in the conservation project of Fez between 1981 and 2005 show that infrastructure is the most important with 52.9% of the whole budget. The second largest investment is made in the rehabilitation of buildings with 22.1%. The third is the restoration of monuments with 11%. The fourth is the protection of environment with 6.6%. The fifth is cultural and tourism development with 4.9%. The sixth is training and institutional reinforcement with 1.3% and 1.2% respectively.^[6]

Technical montage

The technical aspect lies in the qualified personnel and technical tools applied in order to undertake the mission of conservation in Fez. Without this aspect, the institutional and financial tools would never be sufficient. The challenge of many historic sites is that their conservation projects are managed by people who have no expertise in the field of conservation. This delicate task does not only require blue collar administrators and big financial equations. The necessity of a permanent qualified staff, with local expertise and knowledge about the field, is vital for the continuity of any conservation project. Conservation is a training ground. Without sustainability, a conservation project would never reach a stage of maturity that can innovate with appropriate strategies for its implementation.

The conservation team of Fez is always seen as a centralized entity of individuals consumed by the project. Nevertheless, without the determination of some professionals who are devoted to this task, no tangible progress would be made. The conservation program of Fez has, from its initial stage, been a training school of many professionals from various disciplines, who are interested in embarking upon heritage development. Therefore, the success of the project is also related to the large network of professionals connected to ADER-Fès, who are consulted whenever a new large project emerges. Technicians, engineers, researchers, professors, architects, economists, environmentalists, historians, sociologists, and so on are an integral part of the conservation strategy of Fez.

The interaction between these professionals and the field of the medina has forged a new generation of experts who are aware of the intricacy of conservation projects. Accordingly, new technical tools are developed in order to create a technical infrastructure for the project. Among these tools that Fez has pioneered are the GIS (Geographical Information System), Restoration and Rehabilitation Laboratory, Socio-economic and Urban Observatory, Survey and Spatial Analysis Group, and Environmental Analysis Group.

The GIS of Fez is an edge management tool for the conservation data and supervision of projected and implemented projects. It is a crafted GIS for the simple reason that it is a computer program that has been adapted to cope with the complexity and the intricate urban fabric of the medina.

It was launched in 1992 based on SYGER (System of Resources Management designed by the Moroccan Cad-Tech). The results of the interaction of the GIS's interfaces are exceptional. With MicrostationTM, a map of the medina is digitalized in order to have an interface with a database through OracleTM. Thus, the Fez' GIS is based on an active plan (vectors), and it is more efficient than the other GIS programs that rely on aerial photos or static geographical plans.

The many layers of information, and the possibilities to navigate through them horizontally and vertically, allow endless innovations in terms of design and projection of scenarios of development. The digitalization of the different implemented projects on the GIS provides a close monitoring of the repartition of interventions in the medina, which helps in understanding and guiding the mechanisms of rehabilitations.

The Master Plan of Rehabilitation is, furthermore, adapted to the GIS platform, which renders the task of control and legal references easily accessible. This has an immediate impact on the acceleration of the authorization permits of the different proposed private projects.

The Restoration and Rehabilitation Laboratory was established under a convention between ADER-Fès and the University of Fez, Sidi Mohamed Ben Abdellah. The laboratory's work consists mainly in the follow-up of the stability of physical structures, control of the rate of degradation, as well as the auscultation, diagnosis, and analysis of the quality of materials. It is very effective in the prospecting and control of the quality of the building infrastructure.^[7] In addition to the scientific data, this laboratory is also exploring the technical know-how of the master builders through the interaction of engineers with the historic techniques applied in monuments.

The Socio-Economic and Urban Laboratory was created in 1992 with the support of UNDP and Moroccan experts. Its information is centralized around the transfer of polluting activities and the decreasing of the population in the high density districts. The laboratory is a piloting tool for the stability and movement of households, and it is an indicator of the socio-economic mutations in the medina.

The Survey and Spatial Analysis Group is a team of skilled technicians whose main task is to gather data and survey the different buildings and structures of the medina. With its hands-on expertise, this team is able to pursue any newly proposed projects, be it at the level of an individual house or an urban district. It assists continuously the different permits of rehabilitation and reconstruction. The intricacy of the structure of the medina needs permanent control in order to protect it from destructive and inappropriate infiltrations.

The Environmental Analysis Group is formed by experts in the field of environment. The medina of Fez is acutely threatened with the increase of the number of semi-industrial activities that are using toxic materials. The tanneries, for instance, are a major user of chromium that poses a high pollution threat to the water system in the medina. Therefore, ADER-Fès has established advanced studies about the environment in order to alert officials about the risks, and find appropriate measures to resolve the mounting issue of pollution. The most important operation undertaken by ADER-Fès in this matter is the participation in the transfer of the polluting semi-industrial and industrial activities from the medina to a newly planned district of Ain Nokbi outside its walls. The Environmental Group is very active, and has woven multiple partnerships with national and international research institutions.

The technical capacity of the conservation project of Fez was always being tested by the myriad of challenges it faced during the implementation of projects. Thus, it is an accumulated expertise of years of practice in the field. Yet, the need to synthesize such knowledge is required in order to apply it in many other projects or in other historic cities in Morocco.

Conservation of Fez: a best practice model

The assessment of the conservation program of Fez seems difficult because of the overlying political, institutional, technical, and economic parameters. However, many lessons could be learned from this complicated case study. Why is Fez a model of best practice for conservation of heritage cities?

When the expression “best practice” is mentioned what may quickly come to one’s mind is an ideal and successful project. Yet, it would be difficult to assess any project as fully ideal without errors and constraints. One of the master builders in Fez views *innovation as the shift from the normal line of production to take up new constraints that have never been encountered*.^[8] This means that the “expertise,” according to this master, is the accumulation of ready solutions for common issues. The true challenge is, hence, to explore this expertise and project unprecedented strategies for the constraints that have never occurred before. The best practice is, consequently, the one that displays the maximum number of challenges and subsequently the maximum number of solved issues.

This notion of “best practice” goes beyond the commonly applied definition of one effective method or process with a particular outcome. This very definition is tailored to deduce possibilities of duplication of success stories, but by no means reflects the reality of things. Any successful practice has its share of risks and errors. The best practice is indeed the optimization of used resources, the sustainability of the action, and the tackling of forthcoming risks.

The conservation of Fez represents, in this respect, a vast array of issues and innovations that makes it a case to be considered for other heritage cities. It is not a best practice for solving the issue of one isolated monument or of a luxurious museum. It is rather a best practice for tackling the issue of a living historic city used by 160,000 inhabitants, 36% of whom are below poverty level. It is therefore a study of a rehabilitation practice with an outcome that directly impacts on the living conditions of the people. Heritage is in this case a catalyst for enhancing the lives of people.

The areas of success in the Fez project could be summarized as under:

1. Participatory process and community development

According to Fouad Serrhini,^[9] the conservation of Fez is not based on one specific view of heritage, but rather an amalgam of perspectives of different partners in the process. He added that heritage is the property of everyone, and if it becomes personalized its richness is subsequently lost. Therefore, the participatory process is vital for the continuity of conservation as a shared practice.

When the first experimental projects were launched in the medina in the 1980s, the inhabitants could not comprehend them. They were seen as putting a needle in an ocean. The restoration of some monuments could not reflect the true dimension of the rehabilitation of a medina that exceeds any imagination. In addition, the large number of studies conducted made people very vulnerable to questionnaires. The first attempt that secured the

inhabitants' full co-operation was the one relevant to their immediate dwellings. This proves that housing is central for urban conservation, and it is vital for the sustainability of the medina as a comprehensive historic city.

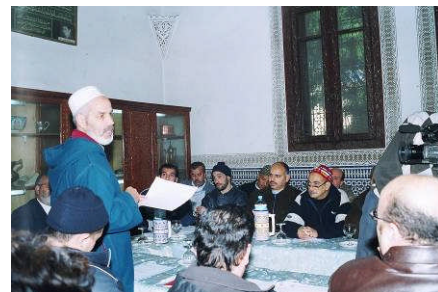
Housing presented a high risk because of the threat of collapse of their physical structures. In 1991, ADER-Fès launched an innovative emergency actions program that targeted the saving of human lives from this threat. This program consisted of an emergency team of builders, architects, and engineers who engaged themselves in the service of stopping the collapse of physical structures on residents from the inside and outside of their individual dwellings. The success of this program led to the signing of a convention with the Fez municipality in 1993 over immediate rescue operations and prevention of risk. This program also became a model at the national level when the Moroccan government released special funds for carrying out similar programs throughout Morocco.



Examples of consolidation and rehabilitation of houses

This is an example of how a participatory process could be a means of developing a conservation project. The participatory process is also a way of enticing the concerned population to be active. In Fez, when the population was participating in rescue operations, it became more aware of its built environment. The medina today contains a large number of neighborhood associations created to voice their needs and be effective in improving their living conditions.

Among the weaknesses that the conservation project of Fez bridged is the community dimension of the medina. Criticisms were made by some experts that the link between technicians and community views ought to be interactive. On the other hand, the expert technicians should not be authoritarian. Guidance and observations of technicians is required, but should not be excessive or undermine the efforts to keep the project on track. Thus, Fez has learned from this interaction and has reached an advanced stage in terms of the participation of the community in the conservation program.



**Coordination meetings with the associations of neighborhoods
Community Center of ADER-Fès**

The outcome of community development in Fez is crystallized in the link between physical interventions and the awareness of inhabitants about the process of conservation. The increase of community awareness about the project transformed their status from a watching audience to an effective actor in the process.

The participatory process also involves the different partners concerned with the project. Private and public investors should be engaged to participate in the process of conservation and development, and be part of it. This participation adds a momentum to the financing of projects and creates new innovative opportunities.

2. Political structure and conflict resolution

Among the difficulties the conservation program of Fez faced was dealing with the political structure. Opposing and diverse views regarding the program subjected the whole project to the crisis of who is doing what, and who has the right to do what. While acting in a political environment where every actor is a decision maker with a respective administrative and power hierarchy, coordination is thorny, and the overlapping of tasks becomes common place. The interests of individuals can overwhelm the need for working as partners in a project. Many projects might be buried because of this daunting issue of power play and communication gap.

The involvement of political parties who lead municipal councils with different perspectives, powerful investors, and technicians of different administrations with different aspirations influence the course of any project. But, if all grasp a vision and embrace the strategies that seek long term positive impacts they are bound to generate a remarkable synergy. The big winner will be the city and its inhabitants.

When the stakes are not multiple, and the stakeholders are eager to maximize profit, the overall outcome of conservation is jeopardized. Meanwhile, multiplicity of stakes, and diversity of projects, provides an ideal and active environment, where all partners have something to do, and everyone becomes essential for the success of the whole project.

Fez has progressed through a number of stages in terms of speeding up the negotiation of conservation decisions among stakeholders. Since 2003 an ideal political environment has been created because of the maturity of the conservation program. The many implementations and their success stories are incentives for making stakeholders adhere to the vision of the program.

The case study of Fez provides, therefore, a rich best practice in the way conflicts were managed in order to keep the conservation program dynamic by integrating different views without shifting from the primary vision or tampering with the substance of conservation.

3. Economic development

The economic growth generated by the project of Fez is remarkable. Visitors who came to Fez in the 1970s and return to it today will easily notice great changes in the built environment. The medina is today a major economic center for the whole urban agglomerate of Fez. The number of rehabilitation programs and the continuous concern for the improvement of the infrastructure has created an ideal milieu for growing businesses. Its vibrant economic sectors are artisanship and tourism. These economic activities are supported by the housing capacity of the medina. Though the population density is high, the job opportunities created are very significant. It remains the largest employer compared to other urban zones in the city of Fez.

The interest shown in the medina through the striking increase of rehabilitation and restoration programs attracts many investors to the heritage sector, particularly in the areas of tourism and artisanship. Nationals and foreigners are, moreover, purchasing historic buildings, and some do exquisite restoration work. Investment in heritage has evolved from exclusive government financing to private financing which is growing fast. That is a good indicator because private investors would never venture into a site if it was not promising in terms of profits. This also indicates the recognition of the economic value of the urban heritage of Fez that has suffered years of neglect.

The economic growth in the medina is also manifested in the investments made by the house owners in order to restore their properties. Without signs of good annual returns, the owners would never repair their properties that were deemed dead in the last decade. The proliferation of rehabilitation by private individuals is good testimony to the momentum for the continuity of the conservation program.

On the other hand, the rehabilitation of individual houses is judged today to be an excellent investment since their financial value is mounting exponentially. This is due to the number of dwellings converted to guest-houses, a market that is growing fast.

With these investments, innovative ideas of design and adaptation of historic structures are explored. Many dilapidated palaces are considered for potential investment. However, a major restraint in many cases is land tenure and ownership status. The complicated legal status of properties, especially inheritance issues, hinders the purchase of many abandoned houses.

4. Environmental improvement

The conservation of Fez has as one of its major concerns environmental improvement. The rehabilitation of the infrastructure and the upgrading of the built environment are central to this improvement. The image of the medina has been improved from that of a decaying urban fabric to a site where living conditions are continuously getting better.

When the medina was neglected before the 1980s, it became a dumping ground for all kinds of polluting semi-industrial activities. The environmental nuisances increased with the lack of control and absence of urban legal guidelines. They range from the use of heavy machinery in a delicate historic physical environment to very poisonous and toxic substances contaminating water resources.

According to a study about the city's environment conducted by Scandiaconsult International AB, the activities in the medina account for 24% of the pollution of the Sebou river (the main river crossing the landscape of Fez) out of the other sources from the whole urban agglomerate, and the discharge of 100 tons per year of heavy metals, most of which is chromium.^[10]

Concern for the environment in the medina was only shown seriously by decision makers in the 1990s. Many measures have since been taken to resolve the issue of pollution and its consequences. First, the government launched the program of detecting and transferring polluting activities in the medina to a newly created semi-industrial district (Ain Noqbi) outside its confines. The transfer is still in progress. This new district has a recycling station that will start operating after the completion of the transfer.

The level of awareness by the inhabitants in the medina is high, and the results of environmental studies are made public. Presently, due to new regulations and permanent control, no polluting activities are taking place in the walled city. Coordination between the different departments and sectors concerned with environment issues is effective. However, the technical and financial issues of the environment projects are not obvious, and difficulty remains in conflict resolution between industries and the intricacy of relations between different partners.

The built environment has shown significant improvement as shown by the number of public squares that have been rehabilitated such as Boujeloud, Seffarin, Nejjarin, Oued Zehoun, and Bin Lamdoun. The large number of ruins evacuated has reduced the density of some neighborhoods, and eliminated a serious source of bad odor and solid waste nuisances.

5. Restoration as urban rehabilitation

The restoration of monuments in Fez was the result of interactions between skilful master-builders and apprentices. The Nejjarin Caravanserai (17th century) was the first important restoration site where the restoration method was explored by local experts. The outcome of this restoration rested on how donors would follow the steps of the

former prime minister of Morocco, Mr. Karim al-Amrani. Mr. al-Amrani ventured into financing the biggest restoration operation of a monument that is the Nejjarin. Instead of focusing on the inside of the building, the restoration was expanded to the whole immediate environment: the public square, the *Suq* (market) of carpenters, four houses, and a mosque. This proved that restoration is not limited to an individual building, but could generate an urban rehabilitation if the donor is concerned with the importance of its social and urban impact. This example has been followed in subsequent restoration projects such as the 14th century madrassas (schools) of Buinanya and 'Attarin.

The importance of restoration as urban rehabilitation is due to the urban morphology of the medina. The overlapping of the physical structures, and the convoluted urban fabric, is dictating the limit and extent of the interventions. For instance, the structural walls of Nejjarin are interconnected with the neighboring houses, which form a compact block. This constitutes many risks when one of the walls is threatened because of the domino effect. Thus, to save the caravanserai is to intervene in all related structures, and consequently, to save the whole urban block.

Comprehensive restoration also has impacts on the social environment of the medina. It shows that a restoration project is not part of a gentrification policy, and instead is a way to improve holistically the built environment of the medina. The Nejjarin has had remarkable impact on the whole neighborhood with its name. The neighborhood of Nejjarin is today a vibrant center of retailing and craftsmanship.

Yet with limited scope, the restoration of the madrasa Buinanya in the neighborhood of Buinanya has the same effect as Nejjarin. Buinanya was financed through a donation by one of the prominent bankers in Morocco, Othmane Ben Jelloun.

The completion of the restoration of the scientific complex of Qarawiyin could have also a remarkable outcome. The ministry of Cultural Affairs financed the restoration of its library, the ministry of Islamic Affairs and Waqf is financing the main mosque, and FADES is financing the madrasa 'Attarin. Also, a major restoration program of the façades of the whole Qarawiyin and Sidi Ahmed Tijani shrine neighborhoods (described as the golden triangle of the medina due to its historic and cultural value) is being undertaken by al-Omarane Holding (a Moroccan Housing Agency).^[11] With these major restoration projects, and work undertaken on the infrastructure, the whole neighborhood of Qarawiyin will be rejuvenated.

The response of the residents of this neighborhood is highly positive because they are witnessing a record up-grading operation in one of the most authentic and vibrant hubs of the medina.

Restoration-based rehabilitation in Fez means, therefore, the expansion of specific restoration projects in order to improve the urban environment. This is indeed a best practice that should be emulated in other historic cities. Since monuments are urban anchors in a city, their revival induces the strengthening of the whole built environment.

6. Infrastructure and facilities

Following the first vision of conservation of Fez, the success of the revitalization of the medina is greatly associated with the up-grading of its infrastructure. The work on the infrastructure prepares the ground for development and rehabilitation projects. Private investors don't want to participate in infrastructure projects, and this remains a critical issue for funding big budgets for macro-infrastructure operations that aim at making a city a functioning one. Government policies are not always effective in this area, which is deeply influenced by the financial resources of local municipal councils. In a developing country such as Morocco, while the scale of private investment is not significant, taxation remains the main sources of financing for public projects.

Despite the limited public budget for the medina, innovative methods have been employed in order to improve its infrastructure. Moving from the small scale interventions, a number of large scale projects have been implemented in the medina. This includes the following:

Water and sewage system: the municipal council, RADEEF,^[12] and ADER-Fès are the main actors in the improvement of water and sewage systems. ADER-Fès has restored more than seven kilometers of traditional water channels under the ground of the medina. These channels are among the most advanced historic water distribution systems in Morocco, and date back to the 10th century. This project was financed by FADES, and included the restoration of springs and public fountains. The municipal council and RADEEF joined hands in up-grading the whole modern sewage system. This is a complicated task, particularly the intricacy of housing patterns in the medina. All the individual buildings in the medina are connected to the sewage system, and this is very important for the sanitary environment of the city.

Traffic organization: In order for the medina to communicate well with the new city outside its walls, the traffic network has been improved especially surrounding the historic walls and their monumental gateways. The limited number of vehicular roads for transit in the vicinity of the medina causes serious traffic jams, particularly in rush hours.

Accesses and parking: Whenever these two words are mentioned, conservationists loudly raise objection in order to keep the medina exclusively pedestrian. If this is so, the accesses here simply mean the pavement and existing pathways in the vicinity of historic walls. This is a strategic action in order to maintain movement in the medina, and make provision for merchandise and raw materials of commercial and artisan enterprises. The accesses facilitate enormously the parking of cars outside the pedestrian road network, and they contribute to the increase of the economy and real estate value of many parts of the medina because of the easy accessibility.

Emergency and liaison circulation networks: These two networks are appropriate solutions for easing movement through the dense and twisty roads inside the medina. These are not for common vehicles. They are only for emergency ones (fire vehicles, ambulances, solid waste collection, and so on). ADER-Fès surveyed the whole traditional road system and pointed out the best plan for reducing the distance between the strategic parts of the medina with minor changes. The emergency and liaison networks have noticeable impact on the communication and transportation networks in the medina.

Electricity and telephone networks: Since the 1960s, the municipality and the RADEEF played a major role in the electrification of the whole medina. Yet, more public lighting is required in order to increase tourism activities at night, which would decrease the influx of passersby during the day. The electricity infrastructure has increased the number of businesses in the medina. In addition, the telephone network in the medina is highly reliable, and it is affordable to households (except the poor ones who constitute a significant number).

Urban facilities: In their attempt to meet the challenges of modern norms of establishing many urban facilities, many ministries have found ways to adapt their norms to the historic building capacity. For instance, ministries of education and health have built a significant number of schools and nurseries in the medina.

The infrastructure cited above are only examples of the efforts made by many actors to increase the living conditions of the medina. It is also a lever for balancing the image of the medina from a destitute urban district to a habitable and decent one.

Research and Training

The major strength of the conservation program of Fez is the rich data collected and endless research activities carried out since the start of the project. This might be also a source of criticism of the team for investing too much in the field of studies. Yet, the handling of a site such as the historic Fez merits wise decisions based on reliable field information. A local proverb about tailoring says: "Think twice before cutting a rich material with scissors."

The continuous errors due to ignorance in the field of conservation may engender disastrous consequences. Before the launching of the conservation program of Fez many irremediable errors were made in the medina. High value heritage if destroyed is irretrievable. Therefore, data and documentation about the precious monuments are needed. However, the continuous research for recording the site contents should not hinder the effectiveness of the interventions. Futile arguments are sometimes raised on small details while neglecting the overall view.

ADER-Fès today owns invaluable documents about the historic Fez that range from meticulous surveys, cartographic supports, socio-economic data, topographical data, and multidisciplinary information, to the knowledge on building materials and techniques of restoration. On the other hand, the 30 years of data gathering also means that there are individuals who grew up with the project and are an invaluable human resource for the conservation program. The mastering of the field is a crucial factor for the success of the conservation project.

Training is not limited to technicians of conservation, but covers different sectors that are related to the conservation of the medina. An Institute of Traditional Crafts and Arts was created more than two decades ago and is training qualified technicians specialized in the conservation field. Some the laureates of this institute are now successful entrepreneurs of restoration in the medina of Fez and elsewhere. This is only one example among others of how training is vital for forging a new generation capable of exploring the opportunities offered by heritage development. While the first concern of apprentices in the conservation vocation has been employment, the conservation sector is today a good job provider with the increase of investment in artisanship and heritage areas.

Conclusion

These are some areas of success of the conservation program of Fez. It could be a true model for experts seeking to avoid errors and learn from the field. This has made Fez one of the unique projects of conservation. The expertise acquired in the field of Fez is unprecedented as to the number of disciplines involved, and the national and international institutions that participated in the program. It is also the difficulty and intricacy of the historic medina of Fez that overwhelms professionals. Thus, the challenge to painstakingly resolve the issues of such a site might inspire future generations on the genius of long centuries of crafting and modeling a city.

What has been written in this article is, unquestionably, neither covering fully the whole process of conservation of the World Heritage city of Fez nor providing exhaustive information. It is intended to decipher the myth around a project that has been active for more than 30 years. Absence of case study research on this conservation project, nationally and internationally, created different images among professionals, politicians, and researchers. It is also meant to present the project of Fez as a best practice in the field of conservation, and make it a case study worthy of consideration by professionals who are seeking to explore new challenges in different geographical and cultural areas in the world.

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^[1] Richard S. Levine is co-Director of the Center of Sustainable Cities and professor in the University of Kentucky. Our interaction through the HAMMAM Project with Oikodrom, Vienna, for exploring the sustainability of historic urban contexts was very productive.

^[2] Following an interview with Mr. Fouad Serrhini, the actual Director General of ADER-Fès (Agence de la Réhabilitation et de la Dédensification de la Médina de Fès) on Sunday, January 21, 2007.

^[3] Amadou-Mahtar M'Bow's speech, Former Director General of UNESCO, for launching the international campaign for the safeguarding of the city of Fez, Fez, April 9, 1980

^[4] This policy is well described in the Agreement documents that were signed between the Moroccan government and the General Union of Enterprises in 2001 under the patronage of His Majesty the king Mohamed VI. It stresses the importance of tourism development in the Moroccan economy. It also explores the rich geographical and cultural resources of Morocco in Regional Programs for Development of Tourism in order to increase the number of tourists within a vision called VISION 2010. However, the impact of such a vision is to be studied.

^[5] "The World Bank has increasingly emphasized over the last two decades the need to deliberately and proactively take into account the cultural dimensions of every economic and infrastructural sector within which it works for development. In turn, the cultural sector itself requires increased support...For practitioners in the domain of cultural heritage management, this strategy framework is not intended to be a set of rigid prescriptions, but rather to offer an array of operational suggestions. Each situation is different and requires locally tailored solutions and innovative adaptations..." Jean-Louis Sarbib, Vice President, Middle East and North Africa Region, Foreword in *Cultural Heritage and Development: a Framework for Action in the Middle East and North Africa* (Washington D.C: The World Bank publication, 2001)

^[6] "Investissements Consentis pour la Sauvegarde de la Médina de Fès (1981-2005)" in *Sauvegarde de la Médina de Fès: Situation Provisoire des Investissements Consentis en Médina entre 1981 et 2005* (source ADER-Fès, Réf: 226/06, Juin 2006)

^[7] Abdaljalil Bennani, "Laboratoire de Restauration et de Réhabilitation de la Médina de Fès : Système d'Auscultation d'évaluation et de Suivi des Risques," Plaquette d'Exposition du Matériel du Laboratoire, ADER-Fès, Janvier 2007.

^[8] Ma'alem (master-builder) Driss Khattun participated in the restoration projects in the medina of Fez from 1982 until his death in 1999 at the age of 80. Ma'alem Driss trained many young builders who are now very active in the different restoration projects in the medina.

^[9] Interview with Mr. Serrhini, op.cit.

^[10] Scandiaconsult International AB, "Sauvegarde de la Médina de Fès: Etude de Restructuration de l'Artisanat de la Médina de Fès et de Médina de Fès et de Protection de son Environnement," (ADER-Fès, March 1996). Even though this research was conducted in 1996, its findings remain credible. These findings are still alarming for the environment of the medina.

^[11] As an unprecedented step, al-Omrane has participated widely in the rehabilitation of individual houses in the historic sites over the whole territory of Morocco. This is indeed a promising action on behalf of this government holding. Other Moroccan ministries ought to pursue this path in order to boost these sorts of projects within the historic cities. This will certainly alleviate the pressure on one agency or institution to do the whole work, and makes the rehabilitation program a joint adventure between all partners.

^[12] *Régie Autonome de Distribution de l'Eau et de l'Electricité à Fès.*

Source of all illustrations in this article is ADER-Fès.