A Guide for Heritage Economics in Historic Cities

Values, Indicators, Maps, and Policies

Christian G. Ost

A GUIDE FOR HERITAGE ECONOMICS IN HISTORIC CITIES
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But the report would not have been possible without the initial support of late Professor Raymond Lemaire (+ 1997), co-author of the 1964 Venice Charter and co-founder of ICOMOS. Professor Lemaire introduced me to heritage economics thirty years ago, and I dedicate this report to his memory.

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Executive summary

Take any historic city on the planet
A World Heritage City or an ordinary historic city
A large nation's capital or a small village
History matters in that city
Its cultural built heritage exemplifies that history
People want to preserve the cultural significance of their heritage

The historic city faces economic and social challenges
Which bring threats to the heritage, but also new opportunities
The city needs to address these challenges, and
Integrate heritage conservation with sustainable economic development
The city needs to assess the economic values of a city heritage
Measure them, and visualize them on maps

This report is intended as a practical and empirical guide
It provides a survey of basic principles in heritage economics
It explains how to measure economic values by the use of indicators
And how to use heritage indicators to build conservation strategies
It explains how to display economic values through the use of mapping techniques
And how to communicate such information to heritage stakeholders in the city

Cultural and historic value assessment cannot be isolated from economic reality
But conservation decisions should never be based solely on economics
Both aspects play an active role for the future of historic cities

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A Guide for Heritage Economics in Historic Cities

Introduction

In times of globalization and economic crisis, cities face the difficult challenge of maintaining growth and sustainable development. This economic trend is irreversible, and in order to survive, cities need to build networks for exchanging the growing flow of resources, information and technology required for future growth and sustainable development. Large cities are in the front line of this evolution. They provide leadership in the global flow of capital markets, economic and political issues.

This trend is also a cultural one. Global cities become the focus of cultural industries, tourism destinations and related institutional innovations. Cultural, social and economic dimensions interconnect to create complex networks of growth opportunities. Large global cities such as New York, London, Paris, Tokyo or Shanghai are becoming major "cultural hubs", with strong implications in terms of cultural leadership, demographic issues, mobility and regional development.

Historic cities are blessed to possess heritage capital of both cultural and economic values, with potential for growth. But these cities face the particular financial challenge of preserving their heritage. Conservation projects in historic cities must be embedded in a holistic and comprehensive managerial process. Yet conservation expertise today tends to cover objects, monuments or sites, with lesser emphasis on the economic and social impact of projects on the city as a whole. Today's decision-makers in historic cities are inevitably confronted with sustainable development priorities. They need information on the economic values of their heritage, and on the economic impacts of its conservation. Cultural goals and economic welfare go hand in hand.

Fig 1 & 2. St. Petersburg, Russian Federation, World Heritage City since 1990.
Today, historic cities can face challenging issues. UNESCO has requested the authorities of the Russian Federation to halt the planned construction of a Gasprom tower in the Historic Centre of St. Petersburg as the project threatens the outstanding universal value of this property. Solving conflictual issues such as this one requires looking at both cultural and economic features of the city.

Fig. 1

Fig 2

> *Over the last 40 years the conceptualization of historic cities and urban settlements has progressed from considering primarily the tangible fabric to including a city's intangible social, cultural and economic values. Contemporary assessments of the urban area's heritage significance hold that the city's value arises from its unique combination of physical, social, cultural and economic conditions and is not confined to architectural merit"*
>
> Summary of Research, Experts meeting on historic cities, GCI, March 2009.

Nevertheless, despite numerous contributions made to help identifying conservation in historic cities, there is no single definition of historic cities or urban areas universally adopted to date.

Historic cities can be defined in terms of social and economic challenges. These may vary considerably between cities. Many historic cities are physically degraded, threatened or damaged by the impact of the modern economic development. Others are desperately longing for new initiatives and new external resources.

Size matters because if large historic cities face more challenging and pressing issues, they simultaneously may benefit from a wider spectrum of economic or financial resources. For large cities, threats and opportunities are often the two sides of the same coin. Alternatively small historic cities can be adversely at risk, either overexposed to tourism, or economically depressed, and facing irreversible cultural, social and economic losses.

Fig 3

Fig 4

Fig. 3 & 4 Naples, Italy and Carcassonne, France
Both cities are World Heritage Cities (respectively since 1995 and 1997), but they are very different in size. Naples is one of the biggest cities in Italy and the capital of the province of Campania. Its population is over 1,000,000 and the historic centre is embedded in a commercial and industrial city (over 250,000 entreprises). Although Carcassone welcomes 3,000,000 visitors annually, the population is 46,000 for the whole city, and the old town covers a small area of 11 ha.

Among the different Charters, Declarations and Memoranda produced over the last 40 years, there is a consensus over the description of the complexity of historic city planning and management. Of particular value as a reference for this Guide are the Charter for the Conservation of Historic Towns and Urban Areas (Washington Charter, 1987) and the Declaration on the Conservation of Historic Urban Landscapes (Vienna Memorandum, 2005).

Excerpts from the Washington Charter indicate the major challenges in dealing with historic cities:

> *(...) In order to be most effective, the conservation of historic towns and other historic urban areas should be an integral part of coherent policies of economic and social development and of urban and regional planning at every level.*
> *(...) Planning for the conservation of historic towns and urban areas should be preceded by multidisciplinary studies.*
> *(...) The conservation plan should aim at ensuring a harmonious relationship between the historic urban areas and the town as a whole.*
> *(...) New functions and activities should be compatible with the character of the historic town or urban area.*
> *(...) The improvement of housing should be one of the basic objectives of conservation.*

Excerpts from the Vienna Memorandum indicate how economic information can help the planning and management process:

> *(...) An essential factor in the planning process is a timely recognition and formulation of opportunities and risks, in order to guarantee a well-balanced development and design process.*
> *(...) Investigating the long-term effects and sustainability of the planned interventions is an integral part of the planning process and aims at protecting the historic fabric, building stock and context.*
> *(...) The development and implementation of a Management Plan for historic urban landscapes requires the participation of an interdisciplinary team of experts and professionals, as well as timely initiation of comprehensive public consultation.*
> *(...) Economic aspects of urban development should be bound to the goals of long-term heritage preservation.*

With the UNESCO Convention concerning the Protection of the World Heritage and Natural Heritage, historic cities throughout the world have been inscribed as World Heritage Sites. In the last 30 years, 242 cities have been listed.

World Heritage Cities differ considerably. Some are highly populated, some are not. Some are nation capitals, or small villages, some rich, or poor. Economically, World Heritage Cities characterize themselves by very distinctive features in terms of output, income, fiscal or financial matters. The geographic distribution covers 83 countries in all parts of the world. World Heritage Cities cover a wide range of economic welfare.

	#	%		% with Low economic welfare	% with High economic welfare
Africa	9	3.7		68	32
Arab States	22	9.1		50	50
Asia & Pacific	28	11.6		63	37
Europe & North America	144	59.5		41	59
Latin America & Carribean	39	16.1		38	62

In Fig 5, cities are sorted by an estimate of their GDP (Gross Domestic Product). City GDP were measured by the product between the extended population for the entire city and the Country GDP/per capita (Sources: www.citypopulation.de, International Monetary Fund). Coordinates were measured using a log-scale. City GDP's vary between Biertan, Romania (US$ 38,000,000), and Mexico City (more than US$ 143 billion). The right part of the table above shows the distribution of World Heritage Cities, below and above the GDP median of US $ 2 billion per city.

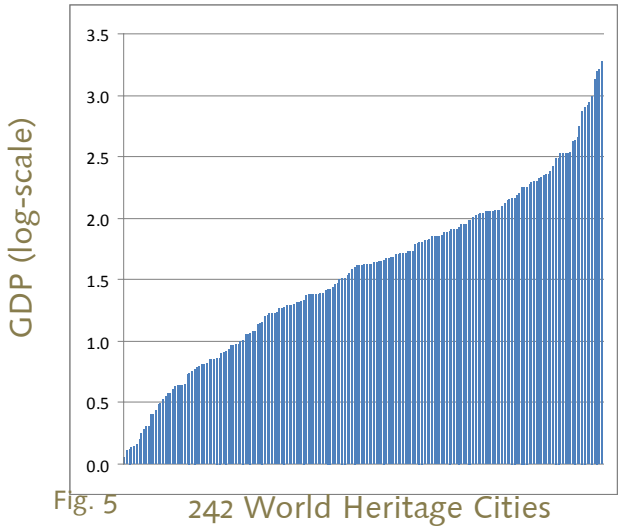


Fig. 5

In economics, the word "Capital" refers to wealth capable of generating more wealth over a period of time. Among different types of capital, there is physical capital (= equipment or technologies to manufacture goods); financial capital (= monetary resources to finance business activities); human capital (= skills and abilities of workers), social capital (= values attached to human organizations); natural capital (= resources of an ecosystem); and cultural capital (= heritage-related commodities and artifacts).

> *It should not be difficult to accept that tangible cultural heritage can be considered a form of capital. Heritage items such as a painting by Rembrandt or a historic building can be seen as assets: both required investment of physical and human resources in their original manufacture and construction; both will deteriorate over time unless resources are devoted to their maintenance and upkeep; and both give rise to a flow of services over time that may enter the final consumption of individuals directly (e.g. when people view the painting in a museum or visit the historic building) or that may contribute to the production of further goods and services (e.g., when the painting inspires the creation of new artworks or when the historic building is used as a commercial office space).*
> David Throsby (Cultural Capital and Sustainability Concepts in the Economics of Cultural Heritage, in Assessing the Values of Cultural Heritage, Research Report, Getty Conservation Institute, 2002., page 103).

Investment is the process that maintains and develops any form of capital in the economy. Heritage in historic cities is related to conservation. And conservation is an investment process of allocating resources over time. The investment decision is that of redirecting resources from being consumed today, so they may satisfy needs in the future. Conservation is therefore an economic process of allocating resources today in order to maintain and/or obtain higher economic values tomorrow. Given the definitions of heritage as cultural capital, and of conservation as an investment process, economists are able to apply conventional asset management techniques and investment theory to evaluate conservation projects.

Macroeconomic investment is a key-variable for long-term growth and development. Through technological innovations and market opportunities, investment provides a new framework for economic growth. Conservation achieves similar objectives in re-using heritage buildings for modern activities, in developing sustainable tourism, and in promoting and diffusing state-of-the-art techniques of restoration.

Fig. 6

Fig. 7

The peculiar distinction in English between "economics" as a science and "economy" as a frugal virtue must not obliterate the etymological link existing between economics and a careful use of limited resources. In this particular sense, the tools developed by economics as a science address a vast array of human activities, in as much as they are characterized as the satisfaction of needs covered by the use of resources.

Economics is therefore about managing scarcity and non-renewable resources. Cultural heritage is a limited resource because it cannot be replaced or substituted. Yet the needs to enjoy its beauty or to use it for human activities are growing fast. According to such a definition, heritage conservation is also clearly an economic choice.

> *It is not a new discovery that economics play a large role in our everyday lives – and an even larger role in the sphere of culture and the arts. The influence of economic and business thinking presents a significant challenge to the heritage conservation field.*
> Marta de la Torre

> *Economic thinking and concepts make indispensable contributions to our understanding of conservation's role in society. As a social science, economics sheds light on individual behavior as well as on the character of society, and thus shares a great deal with anthropology, art history, and other disciplines whose work has traditionnaly had a close relation to the field of conservation.*
> Randall Mason

> *When given a chance, economists will point to the fact that resources are limited (and increasingly so), that the needs are growing and choices are, therefore, inevitable. Economics analysis focuses on the rational choices that agents (like consumers, producers, and workers) make in the face of scarcity.*
> Arjo Klamer and Peter-Wim Zuidhof

These references are taken from a Report by the Getty Conservation Institute: Economics and Heritage Conservation, a meeting organized by the Getty Conservation Institute, December 1998 (the above references are respectively from pages 1, 3 and 27 of the Report).

Other GCI publications related to this topic are:
Values and Heritage Conservation, 2000;
Assessing the Values of Cultural Heritage, 2002;
Heritage Values in Site Management: Four Case Studies, 2005.

Objective of the guide

Historic cities display interrelations between individual agents (households, shops, public services, cultural services) on its territory and around the object of heritage. Some agents are consumers, some are producers, some are demanders, some are suppliers; some regulate, and some interact with the outside of the city. Acting as distinctive decision-making units, but sharing together the growth and development of the city, these actors represent the true stakeholders of the historic city.

This guide is intended to provide fundamental economic principles and guidelines for historic cities' stakeholders in order to help their decision-making process.

> *The variety of values ascribed to any particular heritage object – economic value, aesthetic value, cultural value, political value, educational value- is matched by the variety of stakeholders participating in the heritage conservation process. Balancing these values is one of the most difficult challenges in making conservation decisions that satisfy the needs of many stakeholders.*
> Mason (Getty Report, op. cit., p.2)

- Local and city governments (mayors, councils,...): heritage as a potential source of economic growth.
- Tourism management: visual data on visits, admission fees, satisfaction of the visit and tourist-related expenditures made in the local economy. This offers a larger view on the costs and benefits provided by tourism.
- Individual inhabitants (owners, renters, community groups): the economic value of buildings; a better definition of cultural heritage in historic cities since it should be described as collective economic good.
- Local businesses: consumer behavior in historic cities; market segmentation between local or resident consumers versus temporary visitors; information about where and when people stay, move or visit.
- Investors: historic cities as a place of opportunities; the broad picture of heritage-related activities and expenditures; the financial or economic incentives available for investment decisions.
- Heritage administration, urban planners, conservation project managers: information on positive or negative implications of conservation; enhancing opposition or synergy between cultural and economic values; assessing economic values to conservation project evaluation.
- Site managers: overexposed or underexposed places of visit; visual development information to potential project sponsors; implications of future development for tourist activity; price policy, market analysis, visitor information, and quality of the visit experience.

Outline

Part 1 – Heritage Values - presents a short theoretical framework for the guide on the subject of economics and conservation. This part aims not to give an exhaustive survey of the economic literature, but rather indicate what the reader should know about conservation economics to apprehend correctly the principles and guidelines of the guide. Written in a highly accessible style, with citations and references for suggested readings, it is intended for non economists.

Part 2 – Heritage Indicators - explains how to measure the economic value by the use of indicators. Based on definitions of the economic values of a historic city's cultural heritage, it suggests categories of indicators for each component of the total economic values. It also describes economic and strategic analysis of historic cities using heritage indicators.

Part 3 – Heritage Maps - explains how to present economic landscapes, from data or indicators to maps. The mapping process is defined, along with its specific software and on database requirements. The purpose of this section is also to prepare the decision-making process by using mapping techniques compatible to urban-planning methods.
The test case of the economic analysis of the heritage of Djenné, World Heritage City in Mali, West Africa is presented here.

Part 4 – Heritage Policies – proposes methodologies to city authorities - as macroeconomic policy makers - to enhance planning and managing of heritage conservation, such as cost-benefit analysis and multi-criteria analysis applied to historic cities, with the goal of achieving a balance between conservation and city development.

Part 5 - Practical Guidelines for conservation projects - aims to describe how the economic tools developed in this guide can help conservation project assessment in the case of an imaginary project in a historic city. It also provides estimates of necessary resources and costs.

A Guide for Heritage Economics in Historic Cities

1. Heritage Values

Historic cities and urban areas are complex systems, with multiple groups of stakeholders, interacting with each other, and behaving with their own beliefs and values. There are no simple guidelines to define the cultural values embedded into historic cities and urban environments.

> *Nearly everyone interested in heritage –citizen, scholar, writer, professional, or organization- has a slightly different conception, advanced from a particular perspective, of how to describe these characteristics of heritage. Consider the sampling of heritage value typologies devised by different scholars and organizations. In most instances, they describe the same pie, but slice it in subtly different ways.*
> Randall Mason (Assessing Values in Conservation Planning: Methodological issues and choices, in Assessing the Values of Cultural Heritage, Research Report, Getty Conservation Institute , 2002, p. 9-10)

Many typologies of values have been constructed over the last years. These typologies include a wide range of criteria and identify many different values. Among them: age, historical, commemorative, use, newness, economic, aesthetic, associative-symbolic, informational, scientific, social (including spiritual, political, national, other cultural), monetary, option, existence, bequest, prestige, educational, cultural, academic, resource, recreational,...

The globalized economic context is a challenge for most historic cities, and cultural values may be affected by this unprecedented transformation.

> *Cities are in a perpetual state of crisis management as they struggle to confront multispeed development, exclusion, and violence. Historic districts, bypassed by development, have come to be major recipient areas for the marginalized. The degradation of their urban fabric results in the loss of a rich architectural and urbanistic heritage.*
> Mona Serageldin ("Preserving the Historic Urban Fabric in a Context of Fast-Paced Change", in Values and Heritage Conservation, Research Report, Getty Conservation Institute, 2000, Page 52)

Fig 8
Potosi, Bolivia
Cultural values can be related to industrial history. Among other criteria, the city of Potosi in Bolivia was designated in 1985 as World Heritage City for its role as a major silver mine in modern times.

Fig 9
Roros, Norway
Cultural values in historic cities cannot be dissociated from the industrial, commercial or economic factors that contributed to shape the urban profile during centuries. The historic city of Røros, Norway, World Heritage City since 1980 is linked to the copper mines that were originally developed in the 17th century.

Economic values are not necessarily apart from cultural values. They are another way of expressing values. Cultural values, for example, include educational values, and education determines much of the cultural tourist's behavior and hence economic returns. Cultural values and economic values are not in opposition. They express different views of the same object.

> *In the sphere of material heritage, the simple question of "What is the value of this thing?" provokes a whole range of answers, all meaningful and legitimate –and therein lies an important issue. In a given moment, a given heritage site, building, or object has a number of different values ascribed to it- heritage is multivalent.*
>
> *As a example, take a hypothetical old church: it has spiritual value as a place of worship; it has historical value because of the events that have transpired there (or simply because it is old); it has aesthetic value because it is beautiful and a fine piece of architecture; it has economic value as a piece of real estate; it has political value as a symbolic representation of a certain kind of social order; and so on.*
> Randall Mason (Getty Report, op.cit, p.8)

The *Economics of the arts* or *Cultural economics* had tentatively applied classic economic tools, notions and concepts to the field of arts and culture. But these tools did not induce satisfactory insight, and focus is needed rather on specific values of the heritage. New tools are still to be elaborated in order to approach these values.

Economic values in historic cities are embedded in the urban fabric. Heritage buildings and monuments have an economic significance not just related to the past, but also to future opportunities of the city. In fact, economic values often allow the heritage to keep its cultural significance as the city develops By re-using some outstanding monuments for contemporary needs, cities seek economic values to better preserve cultural aims.

Fig. 10
An opera festival is held since 1913 in the arena of Verona, Italy. When additional aesthetic value is provided by Aida's opera (22,000 spectators at each of the 50 performances each summer), the economic value of both the performance and the heritage increase.

Fig 11
Covent Garden, in Central London, is an example of continuous rethinking and reusing of an urban fabric for changing needs. Being originally an abbey - the Convent of St. Peter - the site was also a major source of fruit and vegetables production in London. The land was redeveloped by the early 17th century and became an architectural ensemble, with an open air market in its center. The site needed a redevelopment by the end of the 1960s when the market needed to move to a new location. With many of the buildings protected, the site was redesigned as a shopping centre and tourist attraction.

The appraisal of economic values can be expressed in terms of stock value or flow value. A stock value measurement of heritage building is given by the real estate value. But most historic monuments are difficult to assess in real estate value or market price.

How can we assess the value of the Coliseum in Rome? There is no price for an outstanding monument, because there is no supplier, no demander, no market, and no exchange. Hence, we rely on a flow value measurement, the measurement of the value of the services generated by the commodity. The services of the Coliseum are the visits to the monument, which are accountable only in terms of flows (How many visitors a year? What is the amount of admission fees received annually?). A flow value is measured for a time period, a day, a month, a quarter, a year. Additional services can increase the economic value of the Coliseum (exhibitions, filming, event, etc.).

Taken as a whole, a city generates a wide range of services. Cultural and recreational services are part of these. A flow value measures the contribution of these services to the welfare of the city. The economic value of the heritage is the value of the flow of services provided annually by the heritage, such as providing shelter for housing, satisfaction to visitors, or venues for economic or cultural activities.

The "production" of "heritage services" to the benefit of the population is very similar to the production services from any industrial or business sector to the city economy. The heritage is an "economic engine" to the city,

The purpose of the economic analysis is to make an appraisal of the value of this contribution. Just as we measure the GNP (Gross National Product) of a country with an annual flow value, we can measure the annual flow value of the heritage.

Fig 12
The historic centre of Vienna, World Heritage City since 2001, is rich in architectural ensembles, including Baroque castles and gardens, as well as the late-19th-century Ringstrasse lined with grand buildings, monuments and parks. As a whole, the historic city of Vienna provides many service to its inhabitants: housing services, jobs opportunities, commerce, cultural activities, administrative, health and education services,… Heritage buildings contribute to the production of these commodities and services very efficiently. The appraisal of the contribution made by the Vienna heritage to the growth and welfare of the city, is what economic analysis can provide.

The main feature that characterizes economics applied to historic cities, is the distinction made between private and public goods. Heritage is part of what economists call "collective goods".

Public economics is a branch of economics that makes a clear distinction between individual and collective values and can help understand the economic value of heritage and conservation.

Collective values are economic values that cannot be attributed to any individual. Liberty or cultural identity are often perceived as collective feelings and addressed as such in the economic literature. Individual and collective values do not necessarily parallel private and public values. The former refer to economic reality, and the latter derive from a juridical or legal definition. A privately owned building can therefore be considered as collective economic good.

Fig 13
Taj Mahal, Agra, India.
Most of the world population knows of its existence and feels that the monument is a world jewel, belonging to everyone.
Victor Hugo said « L'usage d'un monument appartient à son propriétaire, mais sa beauté appartient à tout le monde » (Translation: The use of of a monument belongs to its owner, but the beauty of a monument belongs to all). This exemplifies the heritage as a collective good. Private owners often cannot prevent visitors from enjoying the setting and the beauty of a monument from outside.

Most monuments or historic sites are public or collective goods through their physical presence, in the sense that, being part of a local, national or world cultural heritage, they "belong" to everyone. This economic definition is totally consistent with the cultural value and the various levels of protection of the heritage:

On a local level (low cultural value) the cultural heritage is a collective good to the local inhabitants and its conservation is managed at that level (associations, groups, volunteers,...). On a national level (high cultural value) the cultural heritage becomes a collective good for the country and its conservation is a national issue (national heritage list). On a world level (outstanding cultural value) the cultural heritage is a universal collective good and its conservation is a world issue (world heritage list).

The most common market failures happening on the conservation market are externalities.

> *Externalities are benefits, or costs, of an economic good that are not accounted for by some kind of market transaction. Defined as external to the workings of the market, such effects can be positive or negative.*
> Klamer and Zuidhof (Getty Report, op.cit., p., 29)

When externalities can be appraised, some compensation can occur. Typically, people who enjoy some positive externality should contribute financially to the cost of conservation, whereas people who are impacted by a negative externality should be compensated. If the market fails to make these adjustments, a central authority is needed to do it.

Economists customarily look to government for solutions to market failure for heritage goods, or even to remedy the total absence of a market.

> *The government can simply take possession of heritage goods. The message is clear: the appropriated heritage good serves a public interest, and the government takes responsibility on behalf of its citizens. Another form of government intervention is the design of regulations. In this case government claims authority and imposes its prescriptions and norms on the parties involved. Incentives are the third kind of tool for the conservation of heritage. In contrast to direct intervention and regulation, incentives allow the state to stay out of the actual process of conservation. They no longer engage in hands-on work but provide incentives to shape decisions.*
> Klamer and Zuidhof (Getty Report, op.cit., p. 40-41)

Fig 14
Inhabitants on the Mont-Saint-Michel (41 in the 2006 Census) experience simultaneously positive and negative externalities: they enjoy the setting as a wonderful living place and are annoyed by tourists. Both externalities need public regulations. On one hand, the setting is protected to maintain positive externalities, and these regulations are sometimes considered as a burden for inhabitants. On the other hand, the mass of tourism has to be regulated to avoid exposing the monument to risk, and these regulations are sometimes considered as a burden for visitors. The fact that both categories of people complain demonstrates that they both contribute to correcting market failures.

Different fields of economics bring meaningful contribution to the definition of the economic value of heritage. Environmental and natural resource economics emerged in the 1960s as a distinct branch of economics, although many of the essential principles can be traced further back in time.

The field proposes a distinction between use and non use values. Use and non use values express the tangible as well as non tangible aspects of the built heritage. In economic terms, the distinction between use and non use values refer to marketable and non marketable aspects of the heritage. The peculiar definition of the heritage, being a commodity (a building, a monument), but with value that goes clearly beyond the commodity itself, requires such a meaningful distinction. The measurement of use and non use values aims to develop simultaneously quantitative and qualitative approaches to heritage conservation.

> *The different types of economic values can be illustrated with reference to Venice. A range of direct economic impacts can be attributed to this historic city, including the contribution of its cultural capital stock to the net value of output of goods and services produced by the city's economy. A significant proportion of these direct use values is generated by tourism, which provides the tangible revenue base upon which the local economy is sustained. In addition, Venice gives rise to all three of the nonmarket benefits: people all over the world care deeply about the continued existence of Venice, even if they have never been there; many would be willing to pay something simply to preserve the option of visiting it at some time; and the city is surely regarded as part of Italy's and the world's cultural patrimony. All of these use and nonuse values can be identified for Venice as a whole and, at a more specific level, for individual components of Venice, such as particular buildings or (collections of) artworks contained within its boundaries.*
> David Throsby (Cultural Capital and Sustainability Concepts in the Economics of Cultural Heritage, in Assessing the Values of Cultural Heritage, Research Report, Getty Conservation Institute, 2002, p. 104)

Fig 15
Venice, Italy, World Heritage City since 1987, can be considered as a powerful regional and national economic engine, fuelled mainly by tourism. From under 400.000 visitors a year in 1949, the historic center of Venice welcomes today over 2 million visitors each year. This represents over 5 million nights for hotels in the historic center (Source: Italian State Tourist Board). We can assume a daily average expenditure per tourist of Euros 40 in the province, of which 43% is for lodging, 27% for food, 10% for transport, 14% for retail, and 3% recreational activities. The latter percentage is probably higher in the historic center. (Source: M. Marrente and Scaramuzzi I., Second Homes and Rented Accommodation: Dimension and Role- Methodology of the Province of Venice, in Tourism Statistics. International Perspectives and Current Issues, edited by J. John Lennon, Continuum, 2000).

Non use values are economic values that are not traded or captured by markets and are therefore difficult to express in terms of price. For instance, many of the qualities described as socio-cultural values (historical, social, spiritual, aesthetic,...) are non uses values. They can be classed as economic values because individuals would be willing to allocate resources (spend money) to acquire them and/or to protect them. Non use values are often broken down into the following, closely related categories (which are not exhaustive) in order to specify exactly which qualities of heritage motivate economic decisions: Existence value: Individuals value a heritage item for its mere existence, even though they themselves may not experience it or "consume its services" directly. Option value: the option value of heritage refers to someone's wish to preserve the possibility (option) that he or she might consume the heritage's services at some future time. Bequest value: bequest value stems from the wish to bequeath a heritage asset to future generations.
Klamer and Zuidhof (Getty Report, op.cit., p. 13)

Non use values are the primary type of economic values. Although they represent a significant share of the economic values, they are economically difficult to measure. They are particular to cultural heritage and they feed any subsequent use value. Non use values are a prerequisite to use values.

Because they are not marketable, non use values are not directly measurable in monetary values. In the last decade economists have developed techniques to assess the economic value to non market exchanges. Most of these techniques are today considered reliable and should be used as indicators to help decision-makers.

These non quantifiable data or values can be expressed with the use of a proxy. All the techniques to evaluate non use values are "different ways to slice the same pie". For example, we can measure the "Willingness to pay" for people visiting a city's heritage, or the tax that inhabitants should pay to conserve the city's heritage, and both evaluations represent the same non use values, but differently.

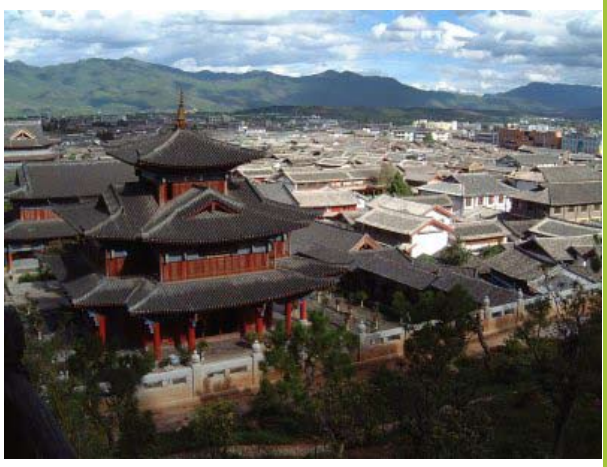


Fig. 16
Lijiang, China, World heritage City since 1997. The old city was inscribed because it is "an exceptional ancient town set in a dramatic landscape which represents the harmonious fusion of different cultural traditions to produce an urban landscape of outstanding quality". These underlying values can explain the existence of economic non use values. The individual expression of these non use values is small, but when multiplied by a vast number of people throughout the world, a large value will be obtained.

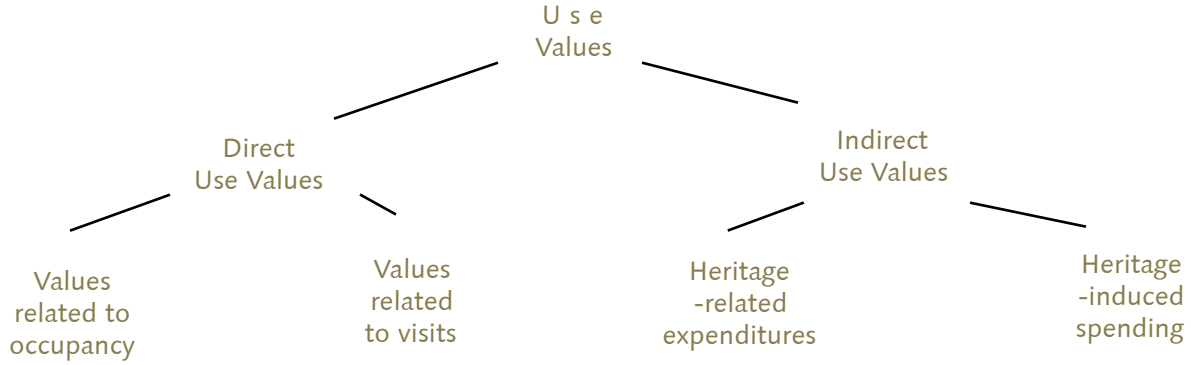
Use values

Use values are the most common of economic values. They are identifiable, often measurable with great accuracy and widely represented in historic cities. Use values also refer to the economic functions provided by the cultural heritage (housing, shops, offices, public services, museum, church, etc.).

These functions are of two types:

- Functions that exist independently from the heritage that provides them. If the monument disappeared, the activity occurring inside could be displaced elsewhere, even into a modern building. This does not exclude that a function is more valuable when located in the heritage.
- Functions that are intensively related to the heritage that provides them (visit to the monument, museum of the monument). If the monument disappeared, the activity could not be maintained nor displaced elsewhere, and there would be a loss in the economic value.

From this distinction, we can break down the use value components:



Heritage provides housing and shelter	*Heritage provides beauty worthy of visits*	*Heritage generates commercial activities*	*Heritage generates jobs and income*

Fig 17
Dubrovnik, Croatia, World Heritage City since 1979.
The City of Dubrovnik (43.000 inhabitants per the 2001 population census) has important administrative and economic activities. The heritage is embedded in a large urban environment and provides a dynamic context of diversified use values to the city. Both tourists and residents can be considered as stakeholders of the heritage.

The core of historic cities is made of heritage buildings and monuments. The main use of heritage in historic cities is related to the functions provided by these buildings in this city.

Many historic buildings have a residential function. Maintaining or improving this function is important for urban development, as it is significant for the benefit of conservation. The expression of direct use values for use of buildings and monuments is given by rental values rather than by real estate values, since rental values are the economic expression of the service provided by the buildings. Rental values are measured by actual rental values for tenant-occupied housing and by imputed rental value for owner-occupied housing.

The occupation of historic buildings by non residents does not contribute fully to the city economy since non residents occupy their residence only part-time or seasonally. This includes second residences as well as housing rental for vacation.

Many historic buildings and monuments also provide services to the city authorities (a historic Town Hall, for example) or house museums or performing arts. Rental values here are best measured by imputed rental value.

The total rental values, estimated as flow values (over a period of one year), give the economic values of the heritage as it contributes to the city economy. Rental values are thus market indicators of individual and collective demand for the use of historic buildings and monuments. The higher the demand, the higher the rental values or economic values of heritage.

Fig 18

Lyon, France, World Heritage City since 1998.
The Vieux Lyon quarter (Old Lyon) covers 74 acres (30 ha), including 500 buildings, 3,000 housing units and 7,000 residents. This represents a high use value for the city and its residents. Most buildings are used for housing, but Old Lyon provides also a wide range of economic functions: hotels, restaurants, retail shops, offices and cultural activities. With a particularly high rate of occupancy, Old Lyon is a very effective economic tool for the city growth and welfare.

Fig 19

Istanbul, Turkey, World Heritage City since 1985. Istanbul developed many accommodation facilities for cultural tourism. A study shows that heritage hotels are more attractive and less affected in crisis periods than hotels in non heritage buildings. Use value for occupancy in such buildings is high, and very profitable for business. Source: Fusun Istanbullu Dincer and Suna Mugan Ertugral, Economic Impact of Heritage Tourism Hotels in Istanbul, Journal of Tourism Studies, Vol.14, #2, Dec.2003.

Historic cities often rely on visitors as a source of revenues and income to the city. Some cities can easily handle more cultural tourism; some experience negative impacts from mass-tourism. By nature most tourism is from outside of the city or from abroad. But visits or heritage-related recreational activities undertaken by city residents also exist.

Although small and big cities face different tourism challenges, the issues involved are similar to tourism management in major cultural or natural sites, and parallel to the public handling of tourism development on a national scale. Many developing countries rely on revenues from cultural tourism to obtain foreign exchange in order to finance imports and growth.

Access and visits to buildings and monuments characterize the economic contribution of the heritage to the city economy. Even if buildings or monuments have no open access, nor admission fees, tourists enjoy their beauty from the outside.

The admission fee is an economic expression of one direct use value of heritage, i.e. the visitation service provided by the buildings and monuments heritage. It represents a flow estimate measured over a time period (a day, a month, a year).

Fig 20
Rome, Italy, World Heritage City since 1980. Rome remains one of the top destinations for tourism in Italy. The number of visitors (mostly related to heritage sites) was 29,7 millions in 2008, of which 43% from Italy, and 57% from abroad. These visitors provide substantial revenues in terms of admission fees to access monuments and heritage sites. More than half of the visits are estimated to be free of charge, which leaves a huge potential consumer surplus (= amount that consumers benefit for free). Source: Rapporto annuale 2008, EBTL (Ente Bilaterale Turismo della Regione Lazio).

Fig 21
The Cathedral of Notre-Dame, in Paris, World Heritage City since 1991. This is the most visited monument in France. It is noteworthy that the two most visited monuments in Paris are Notre-Dame and the Sacré-Coeur Basilique (respectively, 13,6 and 10,5 million of visitors in 2007. Source: Office de Tourisme de Paris). The Eiffel Tower comes 3rd, and charges for the visit, which is not the case for both churches.

These values are indirectly related to the heritage since they are not necessarily physically linked to heritage buildings or monuments. Cultural tourism expenditures on lodging or food increase the economic value of a historic city, but may take place in buildings which do not necessarily belong to the city's cultural heritage.

Heritage economic values in historic cities are determined in part by how the heritage is integrated in the city as a whole. There can be multiple interconnections which amplify initial values generated in buildings and monuments. If there are no infrastructures, accommodations or supply of goods and services in the historic city, there is a missed opportunity for induced growth, development and welfare.

To measure the ability of the city to benefit economically from its heritage, we need to identify expenditures related to the heritage. Tourism expenditures include hotels, restaurants, retail, services, transportation, parking, souvenirs. Additionally, heritage-related expenditures made by residents also count. For example, a monument's day or other heritage event, in which residents participate, will contribute to the local economy. Indirect benefits made in non heritage buildings, such as an increase in real estate values due to proximity of heritage buildings, can be measured as well.

> *A variety of methods, ranging from pure guesswork to complex mathematical models, are used to estimate tourism's economic impacts. Studies vary extensively in quality and accuracy, as well as which aspects of tourism are included. Technical reports often are filled with economic terms and methods that non-economists do not understand. On the other hand, media coverage of these studies tend to oversimplify and frequently misinterpret the results, leaving decision makers and the general with a sometimes distorted and incomplete understanding of tourisms economic effects.*
> Daniel J. Stynes, Economic Impacts of Tourism. Michigan State University.

Fig 22
Salzburg, Austria, World Heritage City since 1996. Only about 6% of the Austrian population lives in Salzburg but they contribute about 25 per cent of the net economic product of Austria: 5 million guests, more than 22 million overnight stays, with almost 189,000 beds available for tourists, and 20,000 employees in the hotel and catering industry. For Austria as a whole, direct tourism added value has been estimated to Euros 13,581 Millions in 2007, and indirect tourism added value to Euros 8,707 Millions. This is respectively 5,0% and 3,2% share of the Gross Domestic Product (WIFO, Austrian Institute of Economic Research).

A note on induced spending

A broad definition of indirect use values includes induced spending. Induced spending is generated by the initial expenditures of residents, tourists, public authorities or private investors in the city economy. For example, tourist expenditures on transportation, accommodation, food, and shopping generate income, which is then re-spent in a second round of expenditures (of a lesser magnitude than the first round), which generates a third round of spending, etc., until the amount becomes negligible. The ratio between the total expenditures and the initial expenditures, is the "multiplied" volume of expenditures, expected to be higher than one.

Hotel bill paid by tourists = indirect use value	Hotel sales increase	Hotel spending for food = induced use value

Multipliers can be measured for private expenditures, tourism expenditures, public expenditures or private investment. Multiplier calculation assumes that we know each and every interconnection of sector activities. In general economists use "input-output analysis" or "Leontieff' Matrix" which describes parameters for these interconnections. When we can measure and sum up these transactions in terms of output, income or expenditures, we can obtain the macroeconomic multiplier.

Macroeconomic impacts on the city at large are of course not all imputable to the cultural heritage. But some are definitely imputable to the existence of the heritage. When positive, those impacts increase the use value, when negative, they reduce it.

Fig 23
A study on the economic impact of the Port Arthur Site, in Australia, has been developed using the Input/Output analysis to measure employment and income multipliers. Results indicate that the estimated contribution of Port Arthur to Tasmania's economy is significant: 178 jobs were either directly or indirectly supported by spending at the site. Wages amounted to AUS$ 5,70 millions, and contribution to Gross State Product to AUS$ 9,15 millions. A broader estimate of expenditures by the Port Arthur Historic Site Management Authority, a government business enterprise, indicates that 292 jobs can be attributed to the site, with associated wages of AUS$ 9,37 millions, and contribution to the State's GSP of AUS$ 15,03 millions.

The consecutive layers of heritage values are represented in Fig 24 below.

We can summarize the different economic values and the relations among them. The main distinction is drawn between use versus non use values.

- Non use values are the closest estimate to the notion that cultural heritage in historic cities belong to residents or visitors. Non use values feed use values, because they generate market transactions and create additional economic values.
- Direct use values in turn feed indirect use values, and induced spending throughout the city economy.
- Some economic impacts occur out of the city and benefit a larger economic environment. Heritage can also contribute to generate economic values outside the city.

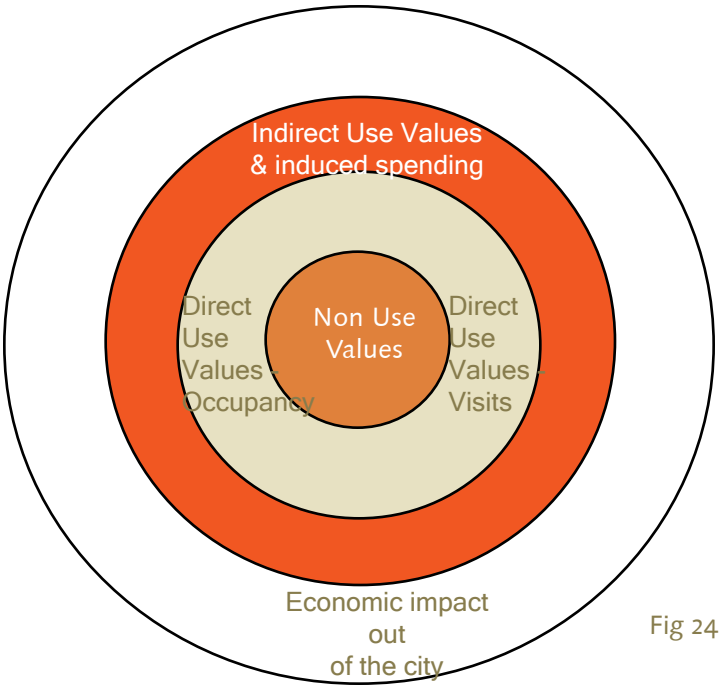


Fig 24

Non use values are difficult to measure in monetary terms, since they are not tradable in markets. Some use values are also difficult to determine. If monetary estimates were available for all categories of values, adding these up would measure the total economic value of the heritage. This is a flow estimate of the annual contribution of cultural built

Economic values:	Types of data:	Sources
Non use	Willingness to pay	Surveys
Direct use for occupancy	Rental values	Property/rental values statistics
Direct use for visits	Visit expenditures	Visits/admission fees statistics
Indirect use & induced spending	Heritage-related expenditures	Statistics or surveys on sales

> *The variety of values ascribed to any particular heritage object – economic value, aesthetic value, cultural value, political value, educational value - is matched by the variety of stakeholders participating in the heritage conservation process. Balancing these values is one of the most difficult challenges in making conservation decisions that satisfy the needs of many stakeholders.*
> Randall Mason (Getty Report, op. cit., page 2).

Given the complexity of historic cities, an economic analysis that provides a large vision on issues such as growth, development, employment, urban-planning or transportation is important. Therefore a macroeconomic analysis may sometimes be an appropriate tool for an integrated vision of the multiple components of a historic city, offering a holistic approach for the optimization of the economic value of the city's heritage.

Such an approach may be more or less suitable, depending on the size of the city:
A sufficiently large entity is required to reflect a macroeconomic reality. A large size embeds the critical mass of economic agents and diversified activities. A small historic village or a historic center will not easily suit the macroeconomic perspective because most of the economic activities we want to measure as economic values appear outside of the city.

Nevertheless, a macroeconomic definition is meaningful to understand how comprehensive an economic approach to heritage needs to be. Macroeconomics are relevant to large cities but also to small historic cities when the relevant boundaries of the analysis have been adapted to that purpose.

This suggests that we consider the historic city in its relevant economic surroundings. By analogy with economic usage, the word "hinterland" (area surrounding a service to which sustomers are attracted) can be applied to historic cities. *Heritage hinterland* refers to the relevant macroeconomic entity surrounding the heritage site.

Fig 25
Lima, Peru, World Heritage City since 1988. The GDP (Gross Domestic Product) of the city was estimated in 2005 at US$ 67 billion. Today large cities consistently measure GDP to monitor growth and development. GDP figures for other World Heritage Cities: Vienna 93, St Petersburg 85, Lyon 56, Lima 67, Budapest 43, Cairo 98, Rome 123, Paris 460 (Source: www.citymayors.com, Price Waterhouse).

Fig 26
The historic center of Warsaw; Poland, is inscribed since 1980 on the World Heritage List. The area is only 25,93 ha, a tiny part of the extended city (0,5 %). Clearly, the extended city of Warsaw constitutes the Hinterland for the historic district.

Macroeconomic models explain the interaction between three base variables: aggregate demand, production, and income, usually on a national scale, but also on regional or local scales – with some methodological restrictions:

- *Aggregate demand*: all expenditures generated in market transactions that create a flow of output and income in the economy. It consists of four elements:
    - *Domestic consumption*: private household expenditures for heritage, as a financial contribution to services provided directly or indirectly by the heritage. Inhabitants (domestic consumption) are heritage "consumers" They pay for and benefit from heritage buildings.
    - *External consumption* (also called exports): private household expenditures on heritage made by non residents. The economic value of the city's cultural heritage is brought in from abroad.
    - *Public expenditures in consumption or investment*: expenditures made by public authorities (city, region, state) for the use and maintenance of the heritage (public consumption) or for conservation of the heritage (public investment).
    - *Private investment*: private household expenditures in conservation for cultural heritage. Hence conservation (as a regular investment process) is the mean to maintain or improve the value of cultural heritage, considered as cultural capital for historic cities.

- *Production of goods and services*: the result of the aggregate demand, it is the aggregate supply (gross national or domestic product) of the economy – creating jobs and opportunities.

- *Income*: wages, corporate profits, rent, etc. generated by the aggregate demand and production. It finances new expenditures and gives stimulus to the aggregate demand.

Applied to historic cities, macroeconomic variables cover the following data:

Contribution of heritage to aggregate demand: • Demand for buildings use (Rental values) • Demand for visits (Admission fees) • Demand for goods and services (Retail expenditures) • Demand for rehabilitation/ conservation (Investments)	Contribution of heritage to output supply: • Housing services; • Services for offices, retail, or cultural activities • Access to the buildings and monuments • Supply of goods and services • Conservation works	Contribution of heritage to income: • Rental income • Profit generated by visits; • Profit generated by commercial activities; • Salaries • Profit from conservation activities

This Heritage matrix connects use values to macroeconomic values.

Macro economic values Use Values	Domestic Consumption C	External Consumption X	Public Expenditures G	Private Investment I
Direct-use values for occupancy	Rents for heritage buildings paid by residents	Rents for heritage buildings paid by non residents	Public expenditures for heritage buildings or monuments	Private expenditures for heritage buildings conservation
Direct-use values for visits	Admission fees for visits to heritage buildings and monuments by residents	Admission fees for visits to heritage buildings and monuments by non residents	Public expenditures or investments to improve or maintain visits	Private expenditures or investments to improve or maintain visits
Indirect -use values	Heritage-related expenditures made by residents	Heritage-related expenditures made by non residents	Heritage-related public expenditures	Heritage-related private expenditures for investments

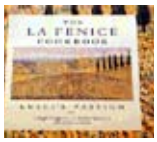
The *row view* presents different categories of use values measured in terms of economic expenditures.

- Row 1 gathers all private and public expenditures made for occupancy, either through rental values (actual or imputed), or through the cost of conservation works. This last item is justified by its purpose for maintaining the service and the use of the buildings. It is a macroeconomic impulse into the economy.
- Row 2 gathers all expenditures made for visits, either through admission fees, or through the cost of investments made to maintain or improve the visits.
- Row 3 gathers all private or public expenditures related to the heritage, and includes investments made to maintain or improve the status of heritage city (public spaces), or the existing economic values (lodging, food, transportation).

The *column view* presents macroeconomic value components.

- Column (C) presents all private domestic expenditures related to the heritage.
- Column (X) presents similar expenditures made by visitors and tourists. It is an external impulse into the city economy.
- Column (G) presents all public expenditures related to the heritage. It is considered as a public intervention into the market economy of the city, and somehow a correction of private market failures.
- Column (I) presents all private expenditures made for conservation and investment. This indicates the amount of economic resources spent today, which will create higher heritage economic values in the future.

This heritage matrix displays the types of data needed to measure macroeconomic values generated by Venice cultural built heritage. Non use values are included in this table but are not connected to the measurement of the macroeconomic values.

Non Use Values	The regional council of Veneto (Venice being region capital) votes a one time tax of 50 euros per household for a financial preservation provision in favor of Venice heritage			
	Domestic Consumption	External Consumption	Public Expenditures	Private Investment
Direct-use values for occupancy	Inhabitants pay rents for heritage houses they occupy in Venice 	Foreign visitors pay rents for 2nd residences they occupy some weeks each year 	Venice municipality gives tax reductions to inhabitants for conservation works 	Inhabitants pay to restore historic windows and doors at their houses 
Direct-use values for visits	Venice residents pay to visit an exhibition on La Fenice reconstruction 	Tourists pay for visiting Venice world famous monuments 	Venice municipality prints folders and develops its website to improve tourist information 	Privately managed museum buys audio-equipment to improve visitor satisfaction 
Indirect -use values	While visiting La Fenice exhibition residents buy books about the opera history 	Tourists pay for lodging, food, transportation, souvenirs,... 	Venice municipality writes on its budget 5 millions euros for canals cleaning 	Albergo Bella Riva builds an additional section doubling capacity of rooms 

Macroeconomic analysis relies greatly on the availability and quality of data. Many countries have developed effective databases for a better understanding of their economy. Some of these databases can be used effectively for the purpose of heritage analysis.

Agents and economic values are described and tentatively measured in the National Income and Production Accounts (NIPAs, U.S. Department of Commerce). Unfortunately such official appraisal is far from complete, adequate and correctly evaluated for the topic of cultural heritage. NIPAs official figures typically underestimate the economic value of the heritage.

Use values for heritage buildings and monuments are compounded in 'Output of housing services', being itself a component of "Personal Consumption Expenditures" (measured by the rental value of tenant-occupied housing or the imputed rental value of owner-occupied housing). That value is often underestimated because the imputed output of housing services ('space rent') is based on rents charged for similar housing and does not consider the heritage status. Furthermore, most publicly-owned buildings are difficult to appraise or not appraised at all, and this amplifies the undervaluation.

Use values for tourists and visitors are compounded in "Personal Consumption Expenditures" (recreation and culture, transportation, restaurants and accommodation services). Again, this is often underestimated value because many monuments do not impose an admission fee. Measurement of the willingness-to-pay would be a better proxy but is not accountable in NIPAs.

Non-use values do not appear at all in NIPAs.

Fig 27
Mesa Verde National Park.
In the US, household expenditures for "Recreation and Culture" in 2002 amounted to US$ 629,9 billion or 8,6% of total Personal Consumption Expenditures. This includes visits to natural and architectural sites.
Cross-sectional analysis brings additional data to official statistics. For instance, a survey undertaken for the State of Ohio indicates that an average of 6,5 % of tourists are engaging in visiting historic sites. That percentage increases to 21,0 % in some part of the State (Appalachian Ohio). Merging national accounts figures with cross-sectional data allows to understand how the cultural consumer's behavior contributes to heritage economic values.

A Guide for Heritage Economics in Historic Cities

2. Heritage Indicators

> *What does the Mayor need to know to measure the performance of the city? Mayors, residents, businesses, and financial institutions, all desire information on a city's performance. There are many ways to measure city performance. At both national and international levels, methodologies have been developed by many agencies and public bodies. This commendable effort has yielded important results. However, much work is still needed to make these benchmarks comparable across countries and over time".*
> City Indicators: Now to Nanjing. Paper presented by the World Bank at the Third World Urban Forum, Vancouver, June 22, 2006, p. 8

Indicators are consistently used these days as an integrated approach for measuring and monitoring cities. They are considered a perfect tool to test city performances.

Indicators are used to communicate information and to make predictions on future performance. They can simplify the interpretation of complex systems and help decision-makers. The use of indicators does not substitute the use of databases. But it is a very effective and pragmatic approach when direct documentation is costly and time intensive.

Heritage performance as a contributor to economic values can also be measured by indicators. Examples of city indicators which relate to heritage or conservation issues:

Goals	Indicators	Sources
• Promote geographically balanced settlement structures	• Urban population growth • Planned Settlements	• United Nations, Habitat Agenda Indicators
• Quality of spaces promoting public health, social life and cultural identity	• Quality of green heritage • Public space	• European Foundation, European Urban Indicators
• Improve green and public space, restore sites, forge the identity of cities	• percentage of heritage spaces in need of improvement on the total surface of heritage space	• European Foundation, Urban Sustainability Indicators
• Participate in maintaining and developing culture	• Number of visits to cultural sites	• Urban Institute, Arts and Culture Indicators

Fig 28 Vienna.
Among many other rankings based on city indicator analysis, the Mercer Quality of Living Survey compares 215 large cities with thirty-nine criteria. New York is the standard reference (score of 100) and other cities are rated in comparison. Criteria include safety, education, hygiene, recreation, political or economic stability, and public transportation. Several World Heritage Cities are among the best rated cities (2009 Survey): Vienna (rank 1), Bern (9), Brussels (14), Berlin (16), Luxemburg (19), Paris (33), Lyon (37).

Non use values are directly related to the cultural value of the heritage. The urban values that justify designation as world heritage city can be expected to generate high non use values. Hence, the existence, option or bequest values should be high. In fact, experience in the field confirms a correlation between cultural values, non use values and collective values. Hence, non use values will be high and will have a great potential to create marketable use values.

Non use values indicators are identifiable for outstanding buildings or monuments, as well as for the historic city taken as a whole. Non-market valuation techniques are used to build these indicators, and can be classified into two categories:

Revealed-preference methods draw and analyze data from existing market or past behavior for heritage-related goods and services.
The two main techniques are:

- Hedonic pricing method: gives an implicit price, or measurement of the willingness to pay for heritage. This estimate is based on several attributes (location of a building, its size, its function,...) and gives an estimation of real estate value and house prices.
- Travel-cost method: measures time and resources allocated by people to go and visit a city or a monument.

Stated-preference methods rely on the creation of hypothetical markets in which survey respondents are asked to make hypothetical choices.
The two main techniques are:

- Contingent valuation method: in which consumers are surveyed for their willingness-to-pay for the provision of a public good. The survey must be constructed in such a way such as not to understate or overstate this willingness-to-pay.
- Choice modeling method: in which study participants are asked to select between choice sets which differ by attributes and levels, generating an overall value.

Fig 28
The contingent valuation method was applied to historic buildings in the old city of Neuchatel, Switzerland. Researchers surveyed individuals about their willingness-to-pay for financing the maintenance of preselected buildings, and for restoration following damages from traffic-caused air pollution. The responses ranged from 77 to 86 USD per househld.
(P. Grosclaude and N. Soguel, Valueing damage to historic buildings using a contingent market: A case study of road traffic externalities. Journal of Environmental Planning and Management, Volume 37, No. 3, 1994).

Indicators related to the occupancy of heritage buildings and monuments help identify the magnitude of the housing demand and hence, of the use values. They can be a convenient alternative to the heavy task of collecting rental values on a large scale.

Suggested indicators include indicators related to rental values (real estate price index, property taxes); occupancy (predominantly housing occupancy); specific segment of market demands (public rented or leased heritage buildings, 2nd residence, vacation residence); population income (household disposable income, mortgage rate of interest,…); and the state of conservation of buildings and monuments. Use values increase with all these indicators.

Indicators related to visits to heritage buildings and monuments help identify the magnitude of the visitor demand and hence, of the use values. Given the fact that admission fees are often below what would be a market price (some monuments are free to visit), indicators are useful to enhance the real economic value of visit and visit-related activities.

Suggested indicators include indicators related to the visit (number of buildings and monuments open to visitors, utilization rate of visitor carrying capacity); admission fee and willingness-to-pay; the quality of service and the satisfaction of visitor (use of IT, marketing, visitor' centre,…); and the tourism growth and general economic conditions. Again use values are positively correlated to these indicators.

Fig 30
The visitors/residents ratio is an indicator of the pressure of tourism into the city. This ratio measured for Venice municipality, was 27,6 in 2005 (89 in the historic core of the city). J. Van den Borg, Tourism Management and Carrying Capacity in Heritage Cities and Sites, in The Challenge of Tourism Carrying Capacity Assessment, edited by H. Coccossis and A. Mexa, 2004, page 163.
On average there are 23 tourists for each inhabitant in Brugge, Belgium, 29 in Edinburgh, UK, and 36 in Salzburg, Austria.

Fig 31
The "Hutong" narrow lanes in Old Beijing are fast disappearing as the city races forwards into the 21st century. A survey undertaken in three areas reveals worrisome housing indicators for the local population. "In cases where private owners rent out rooms, the average rent can be as high as ten times as much as work-unit housing and 15 times as much as public housing" (A. Alexander, P. De Azevedo, H. Yutaka, L. Dorje, Beijing Hutong Study, Tibet Heritage Fund International, 2004, page 34).

The measure of the economic value for heritage-related expenditures is a long tally of many individual data. Induced spending measurement also requires complex techniques. Alternative indicators related to these categories of expenditures help identify the magnitude of these use values. These indicators also reveal how heritage economics are integrated in local city economy.

Suggested indicators include indicators related to the expenditures (lodging, food, retail shops, transportation) made by tourists or residents who participate to heritage-related events in the city (carnival, festival,…); property value of non heritage buildings (premium in property value for non heritage buildings as a result of their proximity to the heritage); and induced spending from conservation works or heritage-related investments.

Heritage-related expenditures by tourists or by residents are commonly estimated by sampling categories of expenditures measured at different locations in the city. Two approaches exist:

1. Measuring the product between the average one-day-expenses per capita and the number of consumers (tourists, residents participating to a particular event,…). Expenses can be broken down in lodging, food, souvenirs, retail shops, or transportation. Indicators of room occupancy or admission to museums can help estimate the number of consumers.
2. Measuring the product between the total sales in the city and the percentage of sales related to heritage consumers. Indicators of percentage of tourists in particular shops can help to estimate the share of tourist sales in total sales.

Induced expenditures are the result of income and jobs created or maintained locally. But the city can lose use values (leakages) when inhabitants go out of the city for shopping, or when tourists go out of the city for food and lodging, for example. In the long-run such a situation can press inhabitants to leave the city permanently.

Fig 32
Quebec City, Canada, World Heritage City since 1985, generates monthly tourism performance indicators. The aggregate index is made of lodging (room occupancy), sites and attractions (admissions), retail stores (transactions) and restaurant industry (meals served) indicators. As an example, when total tourist activity goes from 100 to 104, the year-to-date increase is 4,0%. Others indicators include the use of Quebec City Tourism information centres (at-the-counter information requests), of website (number of users accesses), or international airport activity (enplaned passengers index). Source: ECHOtourism STATistics, Performance Report on Quebec City Tourist Industry, Quebec City Tourism.

An indicator analysis is very flexible, can be undertaken rapidly, and with information gathered at low cost. The evaluation of the selected heritage indicators in each category of values is based on available data, expert opinion surveys, or subjective assessment. While quantitative indicators reveal the size of things, qualitative indicators reveal more about the strengths and the weaknesses of a situation. The link between each indicator and economic values has to be clearly identified.

> *Example:* A high occupancy rate of buildings means that most of the urban fabric in the city contributes to the use values of that city. Occupancy rate and use values are positively related.

Knowing how the indicator predicts economic values, each indicator is assessed on the basis of available information, either raw data, or sample survey. The assessment can be two-fold, indicating the current level of values, or value change over a time period.

> *Example*: If the occupancy rate in the city is estimated at 95%, meaning that only 5% of buildings have been with no use for a long period of time, this indicator could show that the occupancy rate has increased from 93% to 95% within a year.

When the indicator has been adequately assessed, the indicator status needs to be interpreted. Does it represent a positive or a negative impact on the expected economic values? The metrics of the judgment can be a scoring process (for example, a scale from 1 to 5, with 1=indication of very little value, 5=indication of very high value), or a ordinal scale (positive, neutral, negative impact)

.

> *Example*: if the occupancy rate is estimated at 95%, the status of this indicator is considered positive for generating high economic values.

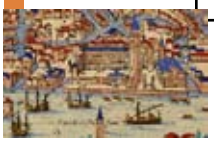
At the end of the process, all selected indicators are assessed and given a status. The status provide enough information to estimate the magnitude of economic values. The more indicators positively oriented, the higher economic values are expected to be measured.

> *Example*: Five indicators have been assessed for estimating direct use values for occupancy. Four are positively oriented, and one is negatively oriented. This indicates that the direct use value for occupancy is almost optimal. It also suggests how to improve the situation (by increasing housing affordability, for example). A similar analysis can be undertaken for indicators of other categories of values.

The selected indicators can be listed in a dashboard to provide a monitoring tool to city authorities (see next page).

Illustrative indicators dashboard

Types of values	Indicators	Expected impact on ecomic values
Non use values	Residents' awareness of heritage significance	Higher existence value
	Willingness to finance heritage conservation projects	Higher tax contributions
	Willingness to visit the city in the future	Higher option value
	Local authorities' commitment for heritage conservation	Heritage-oriented policies
	Status of the city heritage in the country or in the world	Higher bequest value
Direct use values for occupancy	Long-term vacancy rate of historic buildings	Higher occupancy
	Overall state of conservation of the heritage	Better state of conservation
	Heritage buildings at risk	Lesser deterioration
	Property values of heritage buildings	Higher property values
	Residents' average income	High demand for housing
	Housing affordability	Sustainable growth
Direct use values for visits	Access to monuments and heritage buildings for visitors	High demand for visits
	Visitor capacity utilization rate	High demand for visits
	Assisted and guided visits	High visitor satification
	Visitor satisfaction	High visitor satisfaction
	Admission fees	High revenues from admissions
Indirect use values	Average time spent in the city	High expenditures in the city
	Average expenditures per visitor per day	High expenditures in the city
	Local jobs related to visitor expenditures	Local job creation
	Sales related to visitors	High expenditures in the city
	Heritage-related events organized in the city	High expenditures in the city
	Property values for non heritage buildings	High property values



Illustrative indicators dashboard (continued)

Indicator measurement	Indicator assessment (examples)	Status
Sample survey among residents to test awareness	75% respond that they deeply care about their city heritage	Positive
Sample survey of revealed stated preferences among residents	56% respond that they are willing to pay an annual tax of $US 50	Neutral
Sample survey among potential visitors (qsurvey by mail, internet,...)	15% respond that they are willing to visit the city in the 3 coming years	Positive
Survey among city representatives on their personal commitment	30% respond being in favour of a budget increase for the heritage	Neutral
Sample survey among residents and non residents	85% respond that they care to preserve the heritage for the future	Positive
Proportion of buildings with long-term vacancy	Vacancy rate is about 5% all year-round	Positive
Proportion of heritage buildings in fair/good or bad conditions	Heritage buildings are in good or very good conditions in general	Positive
Number of heritage buildings at risk	12 buildings are considered at risk in the historic centre	Negative
Increase in heritage property values relative to city average property value	Property values increased by 15%, which is double of average increase	Negative
Increase of resident income	Resident income increased by 3%, which is the country average increase	Neutral
Increase in property values relative to increase in resident income	Property values increased annually by 15% but income only by 3%	Negative
Number of monuments and heritage buildings with inside access for visitors	26 places can be visited, and they cover the entire historic centre	Positive
Ratio of actual number of visitors to total capacity of visitors per day	56% on the average. Some monuments are overcrowded (100%)	Neutral
Ratio of visited places with audio-equipment and/or guided visit	In only 10% of the visited places, visitors are adequately assisted	Negative
Sample survey among visitors on satisfaction levels	78% respond that they are very satisfied with the visit	Positive
Sample survey among visitors on the admission fees (consumer surplus)	24% of the people respond that admission fees are too expensive	Neutral
Sample survey among visitors (local vs. foreign) about time spent	Local visitors spend a average of 1 day. Visitors from abroad spend 3 days	Positive
Sample survey among visitors (local vs. Foreign) about expenditures	US$ 85 per local visitor, per day. US$ 135 per foreign visitor, per day.	Positive
Ratio of heritage-related jobs over local jobs	An estimate of only 10% of total jobs are local jobs	Negative
Sample survey among businesses about visitor-related sales	25% of sales are estimated to be related to visitors expenditures	Positive
Number of heritage-related events organized in the city	One annual event: Open access-day to most of heritage monuments	Neutral
Increase of heritage property value relative to non heritage property values	Non heritage buildings increased by 12% compared to 15% for the heritage	Positive

A strategic analysis aims to define the situation of an organization, and the direction it has to pursue. Various techniques can be used to identify this situation. As applied to heritage indicators, strategic analysis could provide elements to interpret the following:

- Use values versus non use values, to determine how actual economic values match potential economic values.
- Direct versus indirect use values, to determine how the city economy is able to amplify initial expenditures made for buildings and monuments into broad economic benefits for the city as a whole.
- Use values for occupancy versus use values for visit, to determine if direct use values are driven by domestic consumption (inhabitants) or external consumption (visitors, tourists).
- Direct use values from tourism versus indirect use values from tourism, to determine how the city benefits globally from cultural tourism.
- Direct use values versus induced spending, to determine the extent of leakages or how the city can keep economic benefits inside the local economy.

We can also compare economic values across different historic cities and build typologies to identify historic cities by their economic values.

An illustration can be processed by radar-shaped charts, or "heritage diamonds ». The categories of economic values are presented on both axis, and connected with bolds lines to form a polygon. The shape of the "heritage diamond" displays how –and to which extent- each component of heritage economic value contributes to the welfare of the city.

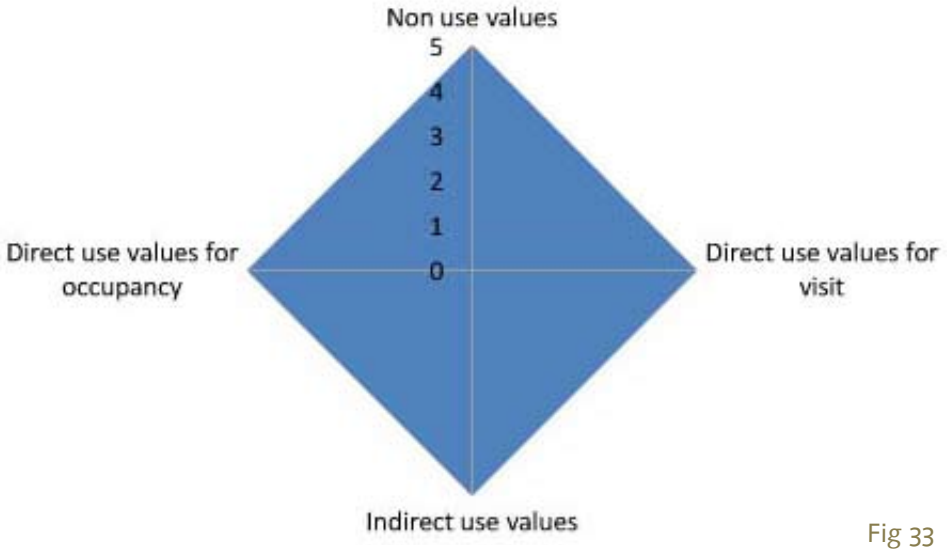


Fig 33

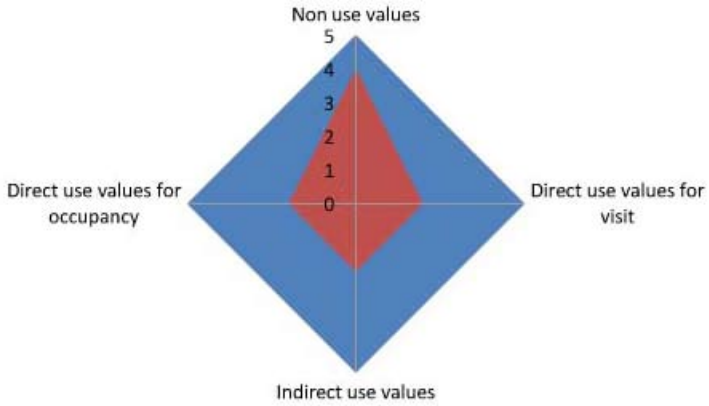


Fig 34
"Northbound diamond"
Indicates a city with dominant non use values over use values
The city of Kotor, Serbia Montenegro (right), a World Heritage City since 1979, was seriously damaged by the 1979 earthquake. The remaining non use values have been restored with UNESCO's assistance.

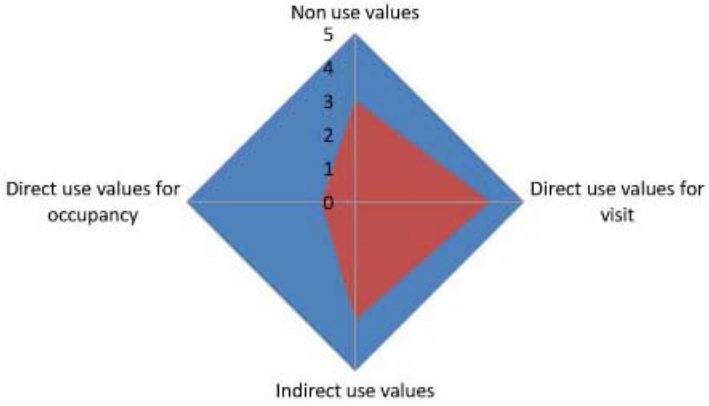


Fig 35
"Eastbound diamond"
Indicates a city with dominant visitor-related use values. It is often linked to indirect values.
The city of Palazzolo Acreide, Italy, a World Heritage City since 2002, has experienced a continual decline of its population since 1940. But the number of visitors has steadily grown during the same period.

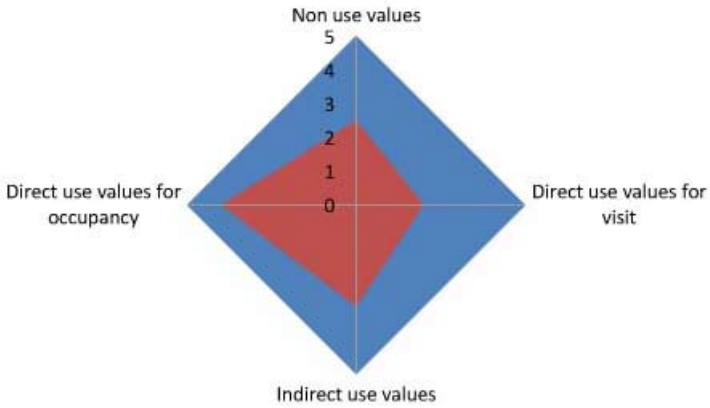


Fig 36
"Westbound diamond"
Indicates a city with dominant occupancy-related use values.
The city of Biertan, Romania (right), a World Heritage City since 1993, has very few lodging infrastructures to accommodate tourism.

An economic analysis determines the relative contribution of use and non use values to the city economy, by taking indicators for these categories of values and analyzing their relationship. Such analysis helps to identify different types of historic cities, and suggests strategic implications.

	Low use Values	High Use Values
High Non Use Values	Potential for development Example: Djenné, Mali, World Heritage City since 1988	Risk of unsustainable development Example: Florence, Italy, World Heritage City since 1982
Low Non Use Values	Loss of values Example: Zabid, Yemen, World Heritage City since 1993	"Killing the Golden Goose" Example: Ayutthaya, Thailand, World Heritage City since 1991

Fig 37. Djenné, Mali, experienced an increase in non use values since its designation as World heritage List. But use values development remains low-key. Strategically there is potential for development, and the city could envision some economic growth from increase in rental values, visitor admission fees, and heritage-related expenditures.

Fig 38. Florence, Italy, developed tremendous use and non use values. From a strategic view and in the short-run, this is a highly profitable situation (a so called "cash-cow" of economic benefits for the city). The challenge is to keep a sensible balance between tourism and inner city development, in a durable and sustainable way.

Fig 39. Zabid, Yemen, is in decline and in a very poor state of conservation. The city's houses have been replaced by concrete buildings, other houses are deteriorating, and the city finds no incentive for promoting use values activities. Inscription on the List of World Heritage in Danger could help to prevent further loss of cultural and economic values.

Fig 40. Ayutthaya, Thailand, remains one of the highlights for Thailand tourism and is threatened by land encroachments from rapid development. Massive use values are produced at the expense of lower non use values. Teh city risks being de-listed from the World Heritage list. By not undertaking a balanced development, it is "Killing the Golden Goose".

Such typology definitions could be generalized to all historic cities using the SWOT-analysis, which aims to define Strengths (helpful attributes of cities to increase heritage economic values), Weaknesses (harmful attributes of cities), Opportunities (helpful external conditions such as inscription on the List) and Threats (potentially harmful external conditions such as a threatening new project).

In 2006, a small survey was developed at the initiative of the 9th OWHC Congress Advisory Committee to gather data from mayors of historic cities. The objective was to evaluate how the inscription of the cities as World Heritage Cities had generated use values from tourism (vertical axis) and use values in general (horizontal axis). Twenty four completed surveys were received.

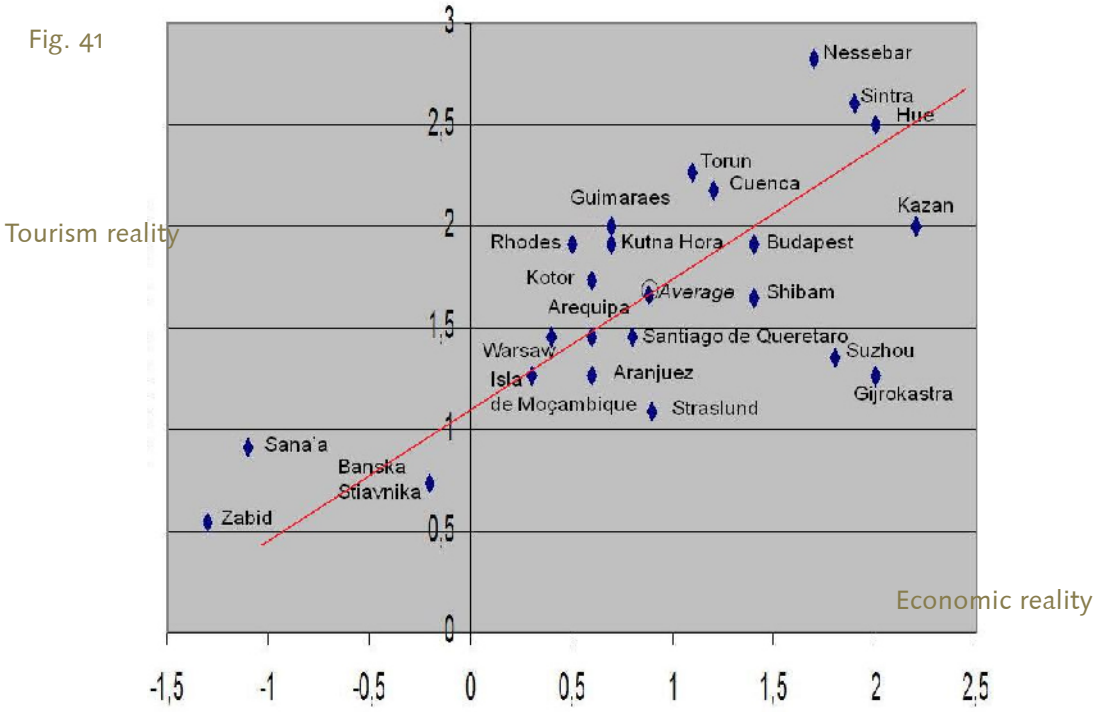
Despite being incomplete, this survey suggested that use values increased since inscription on the World Heritage List, i.e., since economic non use values started to grow. Only a few cities were ambivalent about that (negative scores on horizontal axis). If further development would confirm this, inscription as World Heritage City first creates a potential for development and higher use values. After a while, use values and non use values have to be adequately balanced, and the risk of non-sustainable development emerges.

Assessment of a heritage city's position on this graph:

1. Vertical axis – On a scale between -3 and +3, did the city benefit from tourism, since its inscription on the World heritage list?
2. Horizontal axis – On a scale between -3 and +3, did the city economy benefit as a whole, since its inscription on the World heritage list?
3. Comparison of the coordinates of the city with the average coordinates in the survey (x=0.8, y=1.7).
4. if a city underscores tourism reality (vertical axis) and economic reality (horizontal axis), the city could benefit from a strategic impulse to the economy, to bring higher use values to the city. If a city ranks high in the survey (upper right in the figure), the city should address the issue of sustainable development. Cities with very high use values are at risk of losing cultural attributes of the heritage.

Results clearly indicative of the correlation between use values from tourism and use values in general (red line on Fig 41).

Fig. 41



The lifecycle scheme – as it is developed in strategic product marketing - provides a framework to analyze heritage city development in an evolutionary context. Heritage cities provide economic values along successive stages, with different strategic and policy implications. Starting with the inscription on the heritage list, the lifecycle scheme is associated with stages of growth, maturity and decline. Heritage stakeholders need to remain aware of the impact of time on the propensity of the city to provide economic values.

Such lifecycle patterns are widely discussed in economic literature on tourism. The identified pattern can be described as a "vicious circle". It applies to all economic values, not just to tourism.

> *The concept of "vicious circle" describes the self-feeding linkage between the emerging class of excursionist tourists in the later stages of a destination lifecycle, and the decline in a city's attractiveness. According to this scheme, effective policies for sustainable tourism should attack the critical points where the vicious circle feeds, such as the quality and accessibility of cultural resources*
> Antonio Paolo Russo (The "vicious circle" of tourism development in heritage cities, Elsevier science Ltd., 2001).

Non use and use values follow specific patterns along this cycle.

A- Heritage stage

Inventory, protection and listing of heritage. Designation as a World Heritage City. Identification of significance and cultural values. Identification of non use values. Use values and market transactions gradually start to develop.

B - Growth stage

People are informed of, and recognize the cultural values of the heritage. Non use values continue to grow during this stage, as an increasing number of people become aware of the significance of the heritage. Use values are spreading rapidly to many different activities.

C - Mature stage

Use values gain momentum, with higher rental values, more visitors, and more heritage-related expenditures. Cultural values are widely recognized and feed economic non use values (people are eager to come and visit, or to contribute financially to heritage conservation). Heritage-related expenditures include public investment in new infrastructures to enhance the heritage, to improve visits, and to bring incentives for indirect use values.

D - Saturation or decline stage

Pressing issues from tourism and/or inner stakeholders create conditions for non sustainable development. Excessive use values start to put heritage at risk: inflation-driven rental values, saturation of visitor capacity, unbalanced activities in local economy. Non use values will start to decline because of the loss of significance, integrity and/or authenticity.

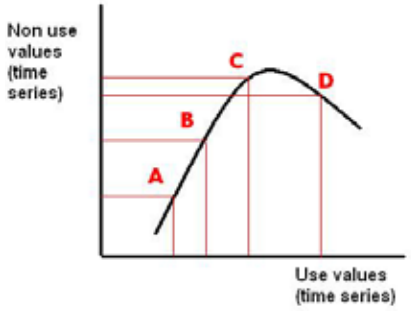
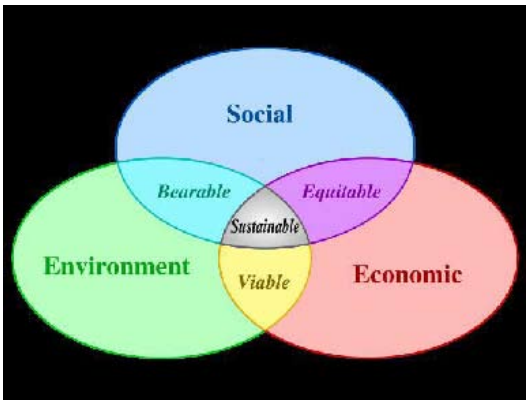


Fig 42

The issue of sustainable development was addressed in the wake of the publication of *Our Common Future*, known as the *Brundtland Report* (Commission on Environment and Development, United Nations, 1983). The purpose of the Report was to address the issue of "the accelerating deterioration of the human environment and natural resources and the consequences of that deterioration for economic and social development." As described in the Report, sustainable development is based upon a paradigm that brings together three different perspectives, economic, social and environmental. Fig 43 shows how these perspectives interact.



Economic growth and sustainable development are consistent, when we take into consideration space and time variables (globalization, and long-term or durable growth). Heritage conservation is a perfect illustration of a policy of sustainable development. Heritage is globalized (World Heritage) and only meaningful in the long-run. Hence, heritage conservation constitutes an obvious choice of sustainable development for historic cities.

Fig 44 depicts how heritage indicators help to test sustainable development. Selected economic, social and environmental indicators, when applied to the heritage and scored, measure the magnitude of each component of sustainable development. It then becomes a useful tool for city government to manage the city heritage and to improve economic sustainability.

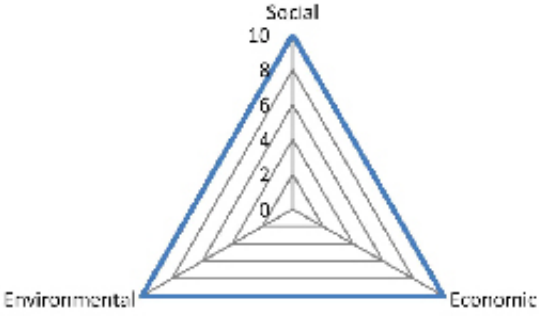


Fig 45
Sustainability indicators were measured for the city of Siena, Italy, World Heritage City since 1995. Among other results, indicators show how clean transportation in the city, water consumption per inhabitant, and the degree to which people suffer from lack of urban safety, has changed ovr 10 years. F. Semboloni, Case Study on Siena, Working Paper, European Foundation for the Improvement of Living and Working Conditions, Dublin, 2005.

Because indicators are positively correlated with use values, it is assumed that the higher the values of the indicators, the best for the city. This can be true in the short term but not sustainable in the long term. When real estate or rental values increase, housing affordability is reduced and gentrification may become a policy issue for the city. The same goes for an excess of second residences in a city where permanent residents are forced to leave the city.

In particular, because use values are positively correlated to revenues from visit, cities are often willing to welcome a larger number of visitors and to charge higher admission fees for the visits. Although this can provide economic benefits to cities in the short term, it is not sustainable in the long term. If access is given to more visitors, the utilization rate of the visitor capacity will expand to saturation level – and sometimes beyond - causing negative and costly impacts on buildings and monuments. And here also, charging higher admission fees (close to competitive market price) and increasing visit affordability may become a social issue for the city.

Many indicators for indirect use values are positively related to activities, transactions or exchanges made in the city as a result of heritage or historic status. It is important to assess the sustainability of such trend in the long term. Retail shop expenditures are a source of income and jobs for the city, but should not be too visitor-dependent. The city needs to keep a diversified supply of goods and services for residents.

Therefore, indicators should be designed and benchmarked to reveal sustainability conditions. For example:

- Ratio between number of tourists and population;
- Ratio between tourist-related shops and total number of shops;
- Percentage of sales related to tourists and visitors.

Fig 46
"The tourism monoculture tends to be one of the subjects which dominate the discussions on the future economic-production order of the city" (M. Rispoli, F. di Cesare, A. Stochetti, in Towards Sustainable Tourism in Venice, in Sustainable Venice: Suggestions for the Future, Kluwer Academic Publishers, 2001, page 127). "The strictest laws regulating tourist shops are placed on two of Venice's most famous areas, the Rialto Bridge and St. Mark's Square. Store licenses from other areas are non-transferable to these two regions. This limit does not apply exclusively to tourist shops in these areas, but bars and restaurants as well. If a shop closes in this area, then another is able to move in, but the absolute number of stores in the area is fixed (870 stores in the sesteri (district) of San Marco)". Source: Venipedia.org (Retail).

A Guide for Heritage Economics in Historic Cities

3. Heritage Maps

Economic information is generally expressed through numbers, statistics or tables of data. When it comes to visualize economic reality, graphs and schemes are used to show changes over time or relationships between variables. Correlation and distribution statistics are common, and can help decision-makers consider complex reality in a nutshell. Creating graphical representations of the economic values of heritage in historic cities is the purpose of this section.

Mapping techniques are less common to economic analysis, with the exception of regional or urban planning, and spatial analysis.

- *Geographical economics* study the location, distribution and spatial organization of economic activities. This field of research includes many topics, such as the location of economic values (industries, activities, transportation, consumption, investment, international trade, real estate,…).
- *Urban economics* analyze the urban system as a resource, for potentially providing the means to produce goods and services for consumption which can satisfy inhabitants.

The relationship between the urban environment and the economy is complex. Town planners often resort to mapping techniques to visualize existing conditions and to simulate future projects, Economists can effectively contribute to urban and regional planning, and economic valuation can rely on similar mapping techniques.

> *Mapping is already a basic methodology in conservation, as part of the assessment of the physical conditions of the heritage being studied. Conservation professionals, architectural and landscape designers, and planners routinely use mapping and mapped information (existing conditions) as the most basic methodology for approaching any project.*
> Randall Mason, Assessing Values in Conservation Planning: Methodological Issues and Choices, GCI, p.21).

Fig 47
Acre, Israel, World Heritage City since 2001.
Design and planning of structures and urban environments give a comprehensive visualization of conservation issues (Source: Global Metropolis Group).

An important methodological step is to select appropriate techniques for representing spatial data. A geographic information system (GIS) captures, edits and analyzes data which are linked to specific locations. This technology of spatial data handling has developed with the growing use of information systems and personal computer.

> *The analytical potential of mapping techniques has been made more powerful by the introduction and wide use of desktop geographic information systems (GIS) and the digital databases linked to them. GIS systems are not in themselves a method of value elicitation; they are a tool for organizing and analyzing data in the service of planning and management.*
> Randall Mason, op.cit., p.21

. Thematic maps are used to emphasize the spatial distribution of economic attributes related to the heritage of historic city.

In general, city census maps provide the base for a mapping system in which parcels are attributed successive layers of economic values, and which can be visualized separately or in combination. These parcels may include heritage buildings or monuments, public or private, as well as public spaces and other relevant infrastructures.

GIS mapping software (ArcGIS, Mapinfo, Maptitude) are useful and reliable tools for the purpose of drawing economic landscapes. The most common method of data creation is digitization. It provides a visual display of values or indicators. As a result, layers of data for individual component of economic values can be visualized separately or in combination. The total economic value of heritage is obtained by adding up all individual layers of data. The reliability of such views depends on data availability and information accuracy.

The precision of a geographic base map depends on data availability. In the US, standardized geographies include state units, county units, place units (equals city), tracts units (fixed in population of between 1,000 to 8,000 people), and block groups. Customized geographies may also include neighborhoods, police districts, tax parcels (fiscal database for individual property), planning zones, local vote precincts, regional areas, sales territories, community areas, target areas and detailed school districts.

Note: Some maps in this Guide were processed using ArcGIS, a Software product by ESRI, the world leader in GIS modeling and mapping software and technology. Given the didactical purpose of this guide, and the time constraint of the research, most illustrated examples – when indicated - are fictional heritage mapping. However, this exercise demonstrates that a simple mapping process can generate a very effective view of a complex realities.

Mapping of cultural heritage has been undertaken for a long time (from original, hand-colored hard-copy survey maps to digital media). This process of recording, documentation and information management for conservation of historic cities is not a technique based on economics. Nevertheless it should be noted that the mapping tools that are effective in the conservation context are also consistent with the capture and recording of economic indicators or statistics.

Digital base maps are unfortunately not always available for heritage cities. Extensive databases for economic values are also hard to find, since it depends largely on the quality and availability of national or local statistics. Few projects in historic cities can afford or justify the expensive cost of acquiring very precise and detailed database for heritage analysis. Therefore GIS mapping techniques for heritage should be considered as an optimal solution, a goal to achieve in the long-run, when a city is committed to put time and resources in this initiative.

However, it is possible to visualize patterns of economic values throughout the city, when we rely on larger statistical units (block groups of buildings, neighborhoods, historic districts). Average values will then be attributed to these selected units.

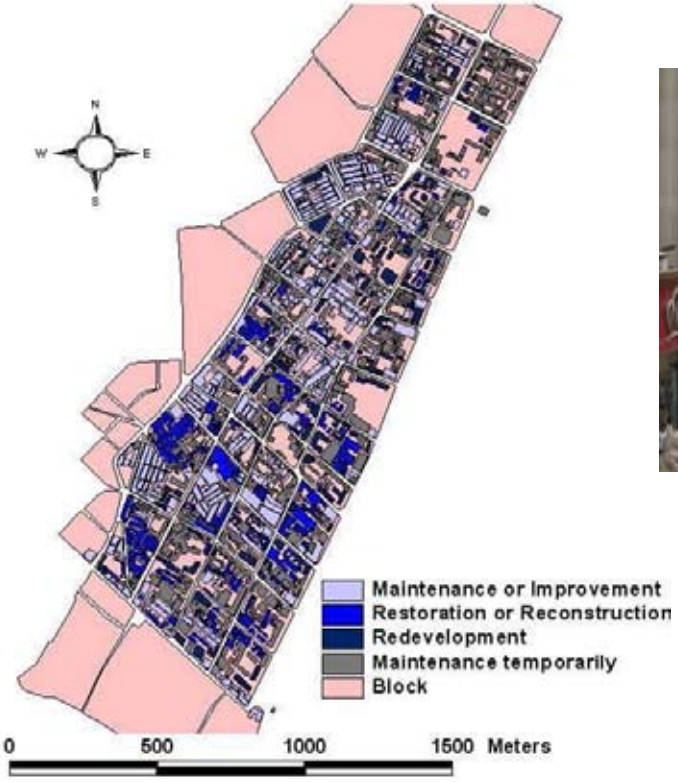


Fig 48
Hankou, China
Illustration of GIS-based mapping of urban heritage conservation. Evaluation of the historical district renewal, by using the variables of the building's protection level, age, protective condition, artistic value and height. Li Rui, "Urban Heritage Conservation by GIS under Urban Renewal: A Case study of Hankou Historical District in Wuhan, China", 44th ISOCARP Congress 2008, p.11.

Non use values are not traded in markets and are difficult to measure. Hence non use values indicators do not perfectly adapt to GIS detailed mapping techniques. However, nonmarket valuation methods are reliable enough to map non use values indicators, in particular when survey results are available in great quantity.

The mapping of non use values is illustrated here, through a stated-preference method (contingent valuation), and two revealed-preference methods (hedonic price and travel cost).

Illustration # 1 – Contingent valuation method

A city undertakes a survey among the population about the value of conservation of a monument, located in the historic center. The contingent valuation method is used to capture data on the willingness-too-pay an annual tax of 20 to 40 US$ per household. Sampling techniques help collect average data for city blocks. Results appear on the map, with a color progression, darker tones with higher WTP values (fictional example on a grid for the City of Torun, Poland, WHC since 1997).

Fig 49

Illustration # 2 – Hedonic price method

Hedonic price is a quality-adjusted price or an implicit price. If people consider a heritage building as having twice the quality of regular houses, then the hedonic price must be twice the actual real estate price. The hedonic price is based on attributes that can be located specifically. Mapping non use values with the hedonic price method involves selecting the buildings (or the parcels) with attributes (prestigious location, proximity to a monument, specific significance or authenticity,…). We visualize non use values on the map, by identifying the parcels where hedonic prices differ from the actual estate value (red color).

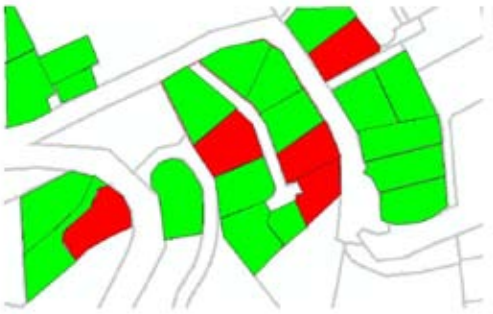


Illustration # 3 - Travel cost method

The Travel cost method uses the cost incurred by individuals for traveling to the city, as surrogate price.

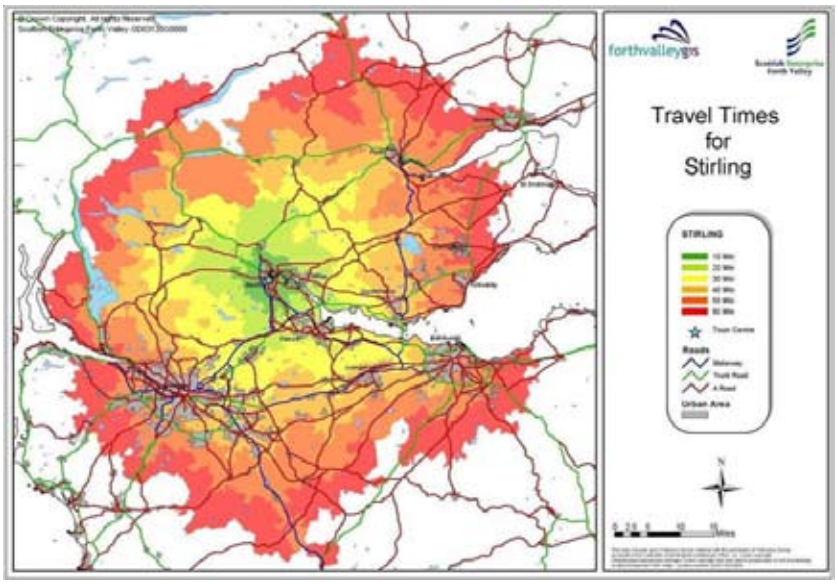


Fig 50

The historic city of Stirling, Scotland, is clustered around a large fortress and medieval old-town beside the River Forth. With a population of 42,000 inhabitants, it is considered the smallest city in Scotland. The map indicates the accessibility to the old town, considering travel time starting from the city centre. A similar map can be used to estimate non use values for visitors coming into the old town from the surrounding countryside. We assume that high travel time (= high travel cost) is an indication of high non use values. The same kind of map, but on a very large scale, can describe non use values for foreign visitors flying and travelling to a remote country for visiting the heritage. We expect that the farther away they come from, the higher they consider the non values of this heritage.

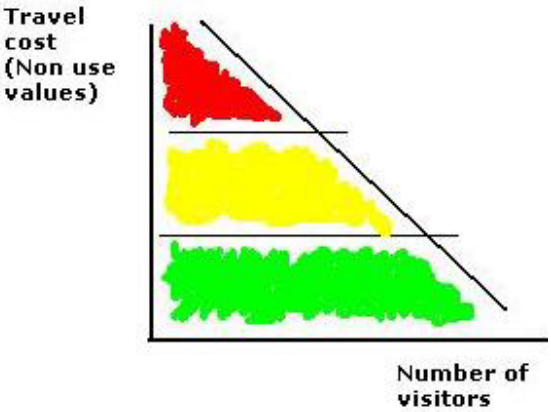


Fig 51

A map based on the travel cost method shows an increasing scale of non use values, as we depart from the city centre. The result is not necessarily a concentric shape, since travel costs are not strictly proportional to distance. This is consistent with a visitor demand function such as defined by Clawson and Knetsch (Economics of Outdoor Recreation, The Johns Hopkins Press, Baltimore, 1966).

Rental values measure direct use values for occupancy. The recording of heritage buildings and monuments provides the baseline data onto which rental values can be added to constitute a first layer of economic values. Rental values can be expressed in monetary values or indices. When individual or cadastral digitalized databases are not available, rental values are measured in average values for larger units in the city. Rental values can be represented with a gradation of tones: lighter for lower values, darker for higher values.

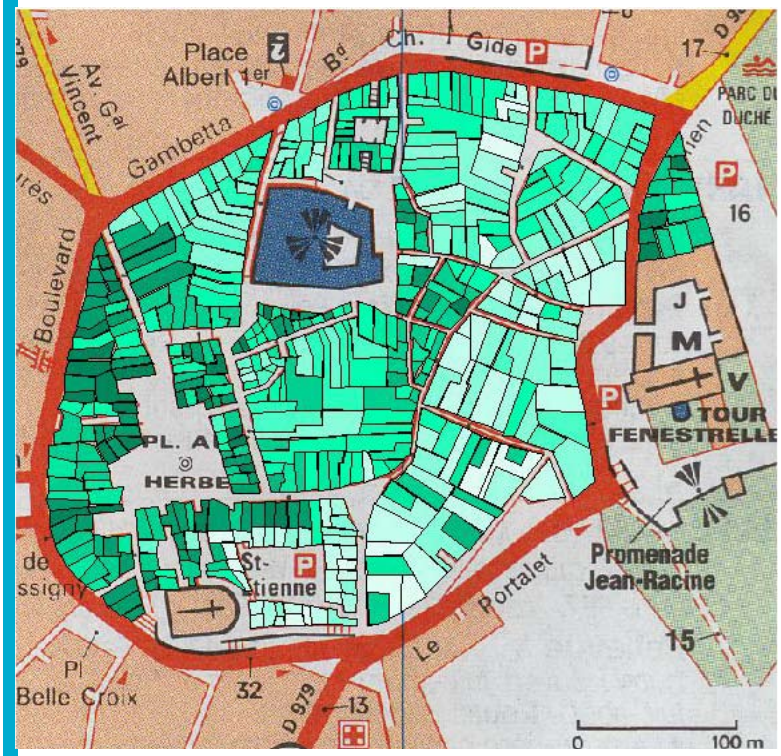


Fig 52
Historic Centre of Uzes, France. Fictional digitalized map. Baseline map: Michelin Guide 2007. This example shows a city with a highly densified area of heritage buildings. Rental values are indicated in green, evidencing that more moderataly priced housing is found in the south east of the city.

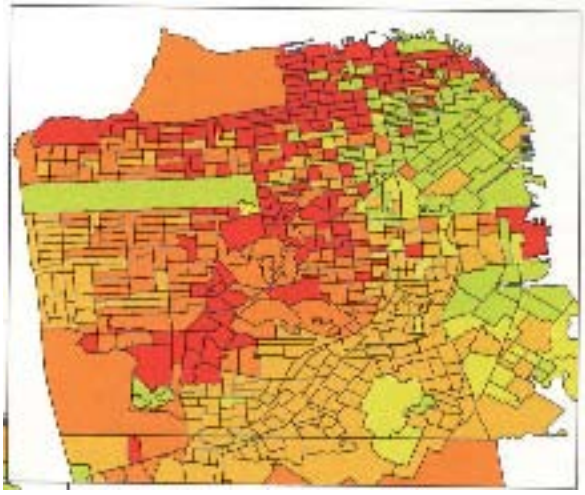


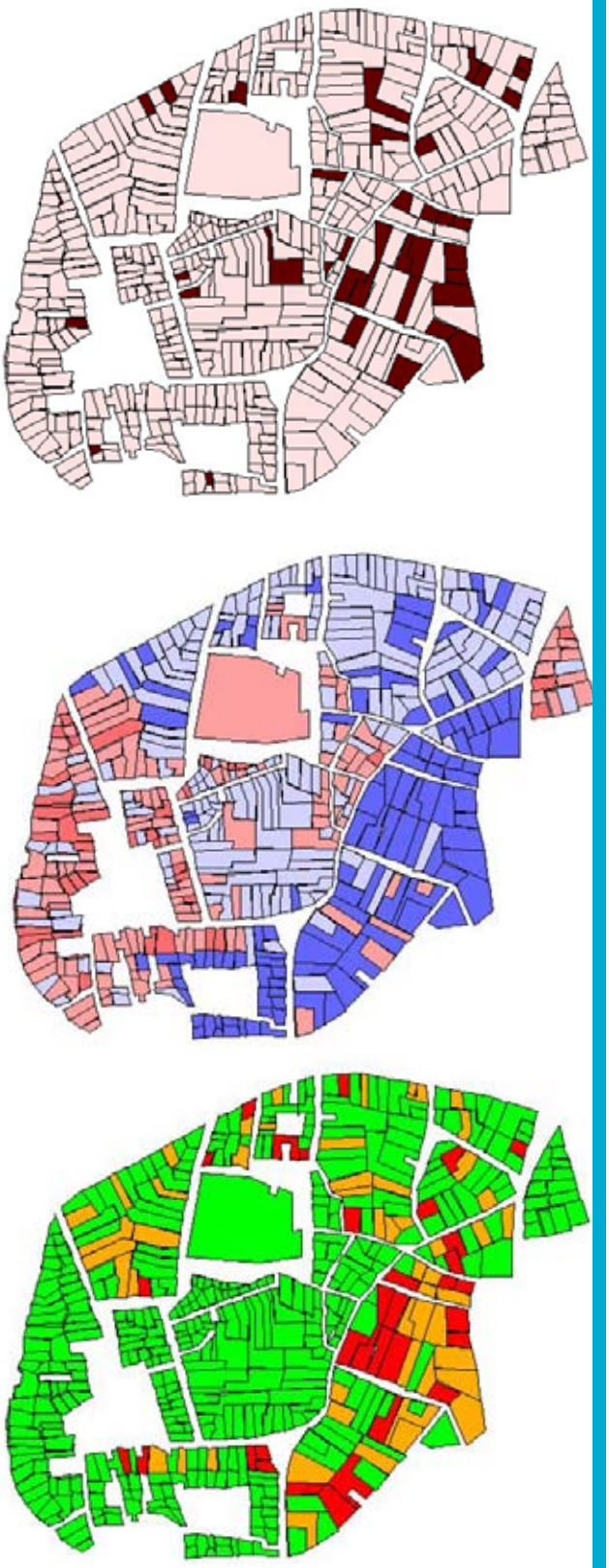
Fig 53
GIS-mapping techniques for rents or real estate values are common for cities, even very large entities. This example shows San Francisco median housing prices in 1990 by census block group. Lowest prices are in green, higher prices are in red. (Source: ESRI map reproduced in John O'Looney, Beyond Maps, ESRI Press, 2000).

Rental values are an economic symptom of market transactions, or demand-supply logic of exchanges. An increase in property or rental values is an expression of excess demand over a fixed-supply of housing in the historic city. The magnitude of the increase (including possible inflationary pressure) is explained by additional factors of the housing market: location in the city, state of conservation of the building, type of occupancy or use, etc.

The three following maps are additional fictional maps of Uzes showing the rental values of heritage buildings.

- The first map (top) indicates the occupancy of buildings in the city (buildings occupied or not). Although most of the city has a high occupancy rate, there is a concentration of unoccupied buildings in the south-east area of the city.
- The second map (central) indicates how property prices for housing can be spatially distributed, when compared to an average value for the city as a whole. Parcels in blue indicate housing prices lower than the average, and parcels in red indicate housing prices higher than the average. Again, more moderate housing prices are in the south-east area.
- The third map (bottom) indicates the state of conservation of heritage buildings. Categories include "good condition" (green), "fair condition" (yellow) and "bad condition" (red). This kind of assessment aims to find a correlation between housing prices and the state of conservation of buildings. As it appears on the map, lower-than-average conditions are concentrated in the east of the city.

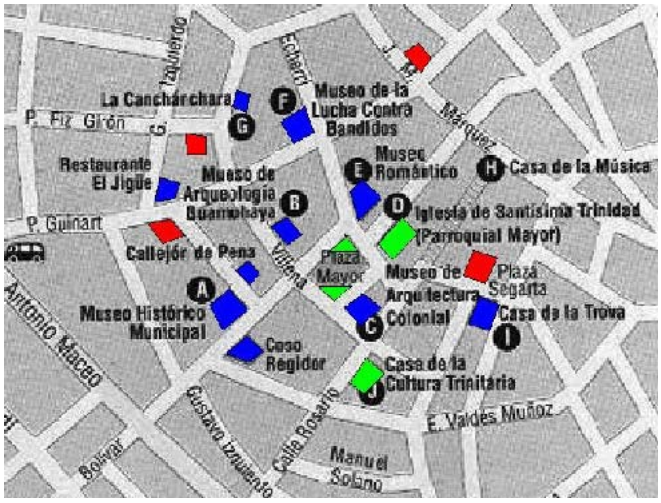
The different layers of data clearly indicate a correlation between the economic factors explaining the economic value of the city heritage. Indeed, most of the indicators show a similar pattern of overvalued heritage in west areas of the city, and undervalued heritage in east areas. Additional indicators related to other components of use values will confirm this situation.



Figs 54-56

The mapping process starts with a presentation of all monuments and heritage buildings in the historic city that could possibly be attractive to visitors. In historic cities, it is difficult to isolate heritage items from other attractive places (museums, natural sites, gardens,...). Direct use values for visits are measured by the amount of revenues as a result of visits, or admission fees. Accordingly, actual economic values are only attributed for places open to the public, and where there is a charge for the visit.

The following map (Fig 57) attempts to visualize direct use values for visit to the City of Trinidad, Cuba, WHC since 1988. Heritage attractions are placed on the map. Estimates of economic values are attributed to them. Legends are as follows: red for places not accessible to the public; green for places with free admission (churches); blue with access and paid admission (higher tones with higher amount of revenues). This map is made with fictional data, to better visualize areas in the city with high or low economic values from the visits.



Figs 57

An additional representation of the same city can visualize the economic reality in terms of number of visitors, because mapping economic values only with admission fees can sometimes lead to a misleading interpretation. For example, churches attract many visitors and are among the most visited places, but do not bring any direct economic benefit to the city. Counting visitors at places where there is no paid admission, remains a meaningful contribution to the city management. First, it allows comparing visitor flows across the city; secondly, it provides data –in case a city wants to evaluate the opportunity of imposing quotas.

Places of interest	Number of visitors	Admission fees USD
Iglesia de Santissimo Trinidad	1250	none
Museo de Arquitecturo Colonial	600	480,000
Casa de la Trova	550	200,000
	(fictional example)	

Alternative indicators for visits, as described in Part 2, can be used for mapping. Visitor capacity (number of visitors per day), and visit utilization rate (actual number of visitors as a percentage of visitor capacity) are useful tools to describe the "visit market" of the historic city. Derived from a straightforward demand-supply relationship, the indicator of visit utilization rate (VUR) can describe excess of demand (hence a risk for the heritage), or deficit of demand (hence a potential for economic values).

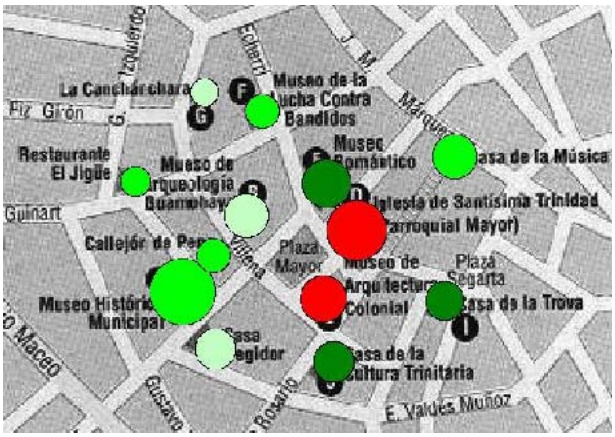


Fig 58 displays the visit utilization rates (VUR) on the map.
Dot sizes indicate the number of visitors.
Colors show the intensity of VUR.
Green=VUR < 100%, demand < supply.
Red=VUR >100%, demand > supply

Places of interest	Visitor capacity per day	Actual number of visitors per day	VUR (Visitor Utilization rate)
Casa de la Cultura Trinitaria	3000	1250	42%
Iglesia de Santissimo Trinidad	400	440	110%
Callejon de Pena	850	600	50%
Casa Regidor	1300	250	19%
Etc.			

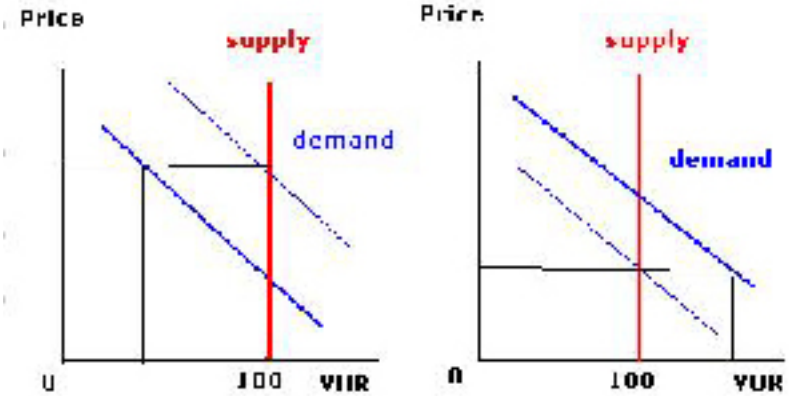


Fig 59. This graph shows the link between admission prices and visit utilization rates. The lower the price, the higher the number of visitors, and the VUR. The supply is fixed because there is no possibility of increasing the size of heritage buildings. If the demand is too low, the only way to increase the VUR is through an upward shift of the demand (left). If the demand is too high, the only way to reduce the VUR is through a downard shift of demand (right).

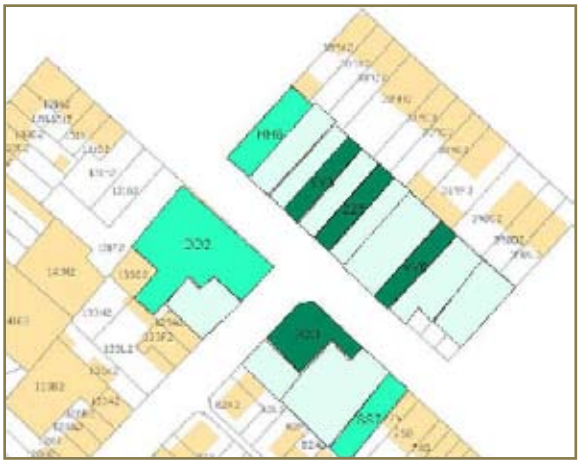
Among economic values, indirect use values are the most complex to identify, to measure and to map. Indirect use values are measured by heritage related expenditures made by residents or visitors. Some of these expenditures are easily traceable and can be inscribed on maps, because they are specifically and completely related to the heritage (a museum of the monument, a souvenir shop, etc.). Other expenditures are more difficult to assess, or must be estimated as average values for entire blocks, streets, city areas, or meaningful economic areas (Hinterland).

The induced spending generated by initial expenditures is even more complex to identify and map. Because it is distributed homogeneously across the city, it is recorded for the city as a whole.

When specific places can be identified or located with precision, the mapping of indirect use values consists of an exhaustive recording and documentation of all such places across the city. This requires extensive gathering of information from hotels, restaurants, shops, visitor information centers, transportation services, guide agencies, etc. , which is a task probably applicable to only a small historic city or district. Big cities have staff, equipment and resources to undetake such recording, but the economic impact measured is not exclusively related to the heritage. A measurement by sampling is inevitable.

Fig. 60. Example: an annual event is organized to enhance the city heritage. Privately owned buildings are exceptionally open to the public. Most of the visitors are city residents and meet for that occasion in restaurants and cafes in the main square of the city. The economic impact of this heritage-related initiative could be measured through food and drink expenditures in the main square, that is in excess of the regular daily sales. Investigators collect comprehensive data in every specific location around the main square. Results are drawn on the following fictional tax-parcel map (darker tones indicate higher indirect use values).

Places (see map) (1)	Sales (2)	Average daily sales (3)	Excess sales (4)= (2)-(3)
Café X	13,900	7,500	6,400
Café Y	19,000	13,000	6,000
Café Z	11,500	6,250	5,250



Modern technology (GIS, GPS, Geocoding) will soon offer ways of better managing tourism in historic cities. These tools will improve site management, and prevent congestion where cities struggle with excess tourism. Similar mapping techniques will help city authorities increase the economic impact from tourism.

Assessing indirect use values requires to rely both on sampling and mapping.
Tourist expenditures for lodging, food, goods or services, transportation, are market transactions defined by a supply and a demand side. Appraisal of these transactions can be twofold.

- A *demand-side analysis* is undertaken through a sample survey among visitors, in order to analyze the consumer's behaviour and to estimate an amount of expenditures per person, per day. Expenditures can also be segmented between per day trip, and per overnight trip. We can either measure individual averages for trip spending and length of stay from the sample, or measure the overnight spending on a case-by-case basis and then average across all samples.

- A *supply-side analysis* is undertaken through a sampling survey among the suppliers-producers. Retail shops, hotels, restaurants, parking lots, transportation business, or guided tours offices should be part of the sample. When the size of the historic city is small, we can undertake a comprehensive recording and mapping of all the places where tourism expenditures are expected to be made. Such a "supply-side" map will display the economic potential of the city, or the capacity of supplying accommodations, goods and services to visitors. It also displays how the heritage and the economic features connect spatially.

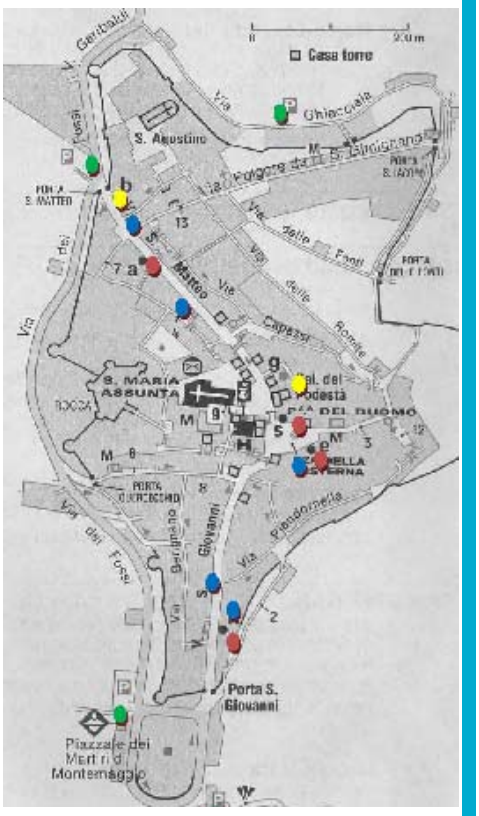


Fig 61
The illustrated example of the city of San Gimignano, Italy, WHC since 1990, shows a remote site where all businesses for food, lodging, or goods and services, are cultural tourism-related. Given the almost isolated feature of this place, we can assume that a very high percentage of sales are due to heritage visitors. A sampling survey can be undertaken to measure the amount of sales (the map is indicative and show options for sampling - hotels are in red, restaurants in yellow, shops in blue, parking in green).

A supply-side map aims to combine two layers of data: heritage and local businesses.
The first layer of data is heritage attractions for visitors, and their urban connections (streets, public spaces, market square, gardens, promenade,...). It displays expected patterns for tourism walking throughout the city.
The second layer of data includes local businesses or places where tourists make expenditures, hence potential places for indirect use values. Both layers overlap and display how the economic impact is correlated to the visit of the city. Sampling techniques should then be undertaken on the locations highlighted on this supply-side map.

The following illustration is taken from an early and tentative study on heritage impact on the local economy, measured for the medium-sized historic city of Diest, Belgium (Geldstroomanalyse op gemeentelijk vlak, in Economische en Fiscale Aspecten van de Monumentenzorg, King Baudouin Foundation, Brussels, 1990, page 55).

The following steps were involved in identifying the relationship between the heritage and the economic impact on local businesses. Because this city is an example of non intensive tourist city, it illustrates how total expenditures can be broken down into regular expenditures and heritage-related expenditures.

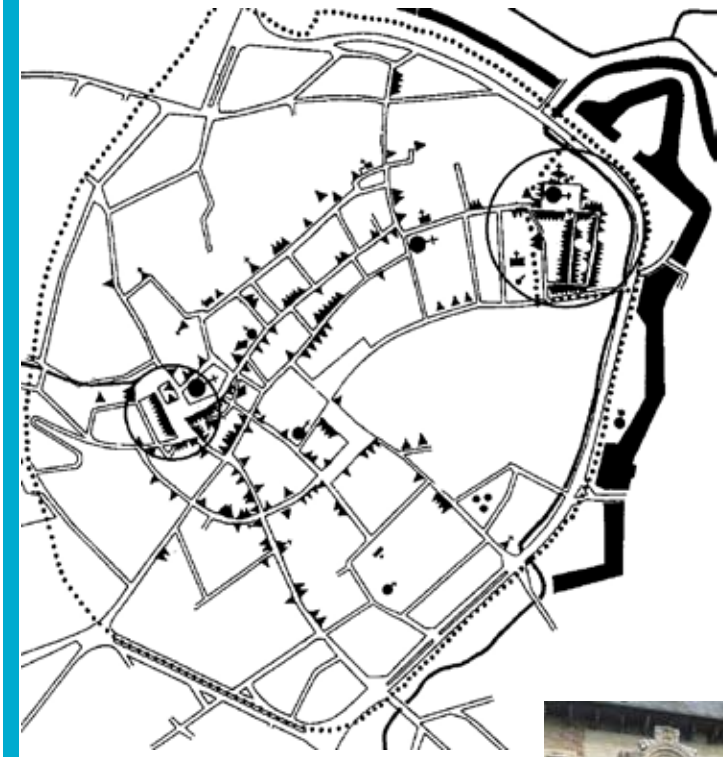
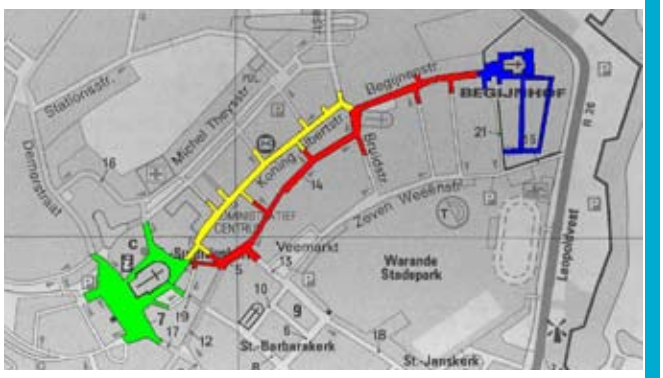


Fig 62, Diest, Belgium

Step 1 - *Heritage map*. Buildings and monuments with heritage significance are depicted on the map of Diest (triangles for heritage units). Although the heritage is fairly spread over the entire city, there are two more concentrated areas (highlighted in circle): the Market place with Sint Sulpicius Church (west), and the Beguinage (east).

The heritage of the city of Diest goes back to the 14th and 15th centuries, when the city was a territory of the House of Orange-Nassau, and when locally produced linens were sold all across Europe. Today, the built heritage is situated imostly in two areas, the Marketplace and the Beguinage. Around 275 houses are considered as heritage buildings (see map).

Step 2- *Map of local businesses*. Four areas were selected. The first two overlap precisely the main heritage areas, because businesses (cafes, restaurants, retail shops) are located inside heritage buildings. The two remaining areas are connecting streets frequently used by tourists.

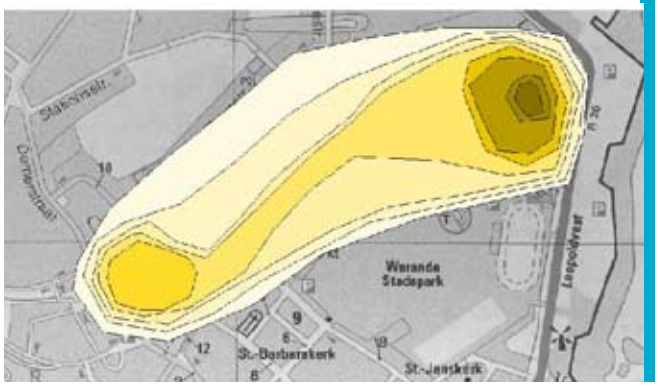


Step 3 - *Correlation between visit and local expenditures*. A sample survey is undertaken in each area to measure the correlation between visit and visitor expenditures. The survey must indicate the nature of the business and its location. Indeed, all commercial activities do not develop identical correlation between sales and visitor expenditures; some businesses are clearly related to tourist sales (souvenirs, postcards,…), while other are not (bakery, furniture,…). Coefficients obtained from the sample survey can be generalized to the entire area. This table displays sales percentages for four selected areas in Diest. The high proportion of visitor-related expenditures for the restaurant in the Beguinage area, is explained by its remote location inside the Beguinage itself. By comparison, the Marketplace is visited by tourists as well by city residents. Coefficients obtained from a supply-side approach can be compared to survey results conducted among visitors (demande-side appraoch).

Select areas	Number of businesses	Percentage of sales related to heritage-tourism
Market place	22	20%
Beguinage	1	70%
King Albert Straat	6	5%
Ketel-Moonstraat	3	15%

Figs 63 & 64,
Diest, Belgium

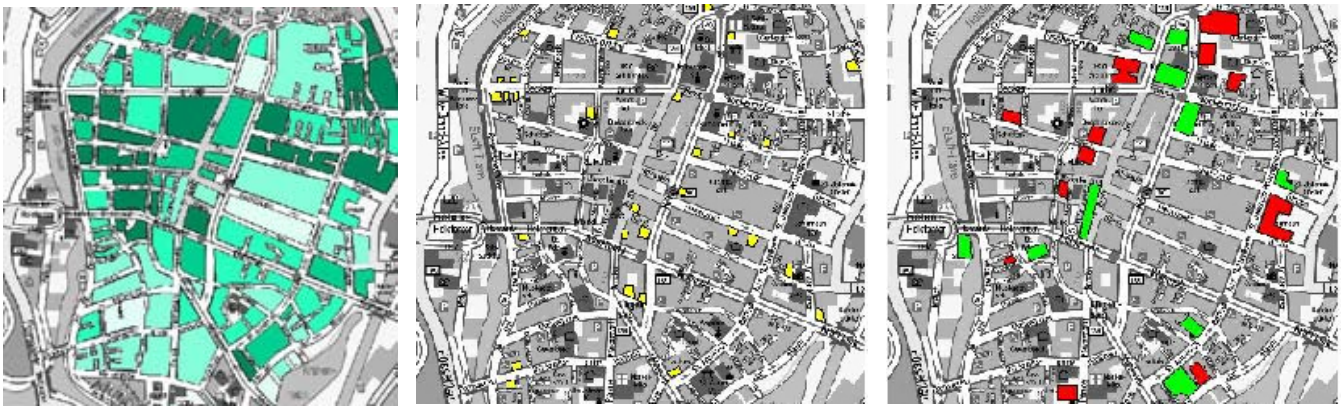
Step 4 - *Mapping supply-side with the heritage*. This map visualizes the correlation between heritage attractive places and the supply-side framework of the historic city. It displays areas (heritage Hinterland) with equal level of indirect use value. The patterns indicate how the attractive places for visitor generate areas of economic values. Given the setting of the historic city, the ground configuration, the situation of the heritage, the location of businesses, patterns will be expressed through different shapes. Economic impacts do not necessarily diffuse into concentric circles with decreasing intensity. Shapes could be concentric, or eccentric (isolated site with indirect use values far away from the heritage). Indirect use values could be drawn following linear, circular, or star-shaped areas.



The editing and analysis of heritage maps require techniques that focus simultaneously on the different elements of use values. All gathered information must be visualized first on separate maps. Rental values, admission fees and indirect values do not always show similar pattern, or a consistent spatial distribution. Adding direct and indirect use values on a single map provides a comprehensive view of the economic values of the city heritage. This facilitates the identification of blocks or neighborhoods in the city with different values for the heritage.

Fig 65, Lubeck, Germany, World Heritage City since 1987

The following maps display use values for the heritage of the old city of Lubeck, Germany. Heritage maps include (from left to right) rental values measured by blocks, values from visits (places in green, no admission fees), and indirect values (hotels, restaurants and retail shopping for visitor). Actual and fictional data.



The multi-colored map below left is a comprehensive heritage map for the city, adding together the different layers. This illustration depicts a city with values almost equally distributed across the area of the old city. A tentative 3-Dimensional map at right is also presented to enhance the areas of the city with very high values. It visualizes the economic landscape for the city.

The ancient town of Djenné is located 600 km north east of Bamako, the capital of Mali, West Africa, and has a population of about 20,000 inhabitants (2008 estimate). It welcomes roughly 15,000 tourists per year, of which 3,000 overnight in the town (2008 estimate).

The city is situated in the interior delta of the river Niger, and is annually surrounded by the rising waters of the Bani and Niger during the rainy seasons. Djenné was traditionally a trading post for trans-saharan trade, and a religious centre for the study of Islam. Its strategic position between two modes of transport (river and land) made it a rich and coveted city over the centuries. Its pivotal role eroded in the early 20th century as nearby Mopti became the regional capital. Since then, Djenné's economy relies primarily on agriculture, fishing, cattle, artisanship, and more recently, tourism.

Its earthen architectural style reflects centuries of acquired knowledge, know-how, traditions, and lifestyles of its populations. It also has adapted to the landscape and surrounding river banks. For this reason, the old town of Djenné as well as three nearby archaeological sites were inscribed on the list of World Heritage in 1988.

The urban heritage of Djenné's historic center includes 1,858 houses (12,000 inhabitants), of which some 50 two-story houses built in the traditional djennonké style. Djenné was a center of Islamic learning and pilgrimage, one of the most important in West Africa, and its Grande Mosquée, originally built during the 13th century, dominates the market square. The present building was rebuilt in 1907 and can welcome up to 3,000 people. Per local tradition, each year, the masons of Djenné and the local community maintain and recoat the mosque, which represents a unique event of private community conservation investment in cultural heritage.

There has been much collaboration with Mali to preserve the architecture of the town (Aga Khan Foundation, Dutch restoration project, Union Européenne, etc.). The city perimeter is quite limited by the river surrounding it, yet it is estimated by UNESCO that in 2025, the population in the historic center will have increased by 45% (from 13,000 to 19,000). Tourist numbers are likely to increase as well.

Fig 66 & 67
Djenné, Mali, World Heritage City since 1988.

In recent years the city has faced the following economic and urban challenges, which impact its heritage: a gradual impoverishment of the population due to increased droughts, which makes the maintenance of the traditional earthen facades more difficult to afford, resulting in buildings abandonment and collapses; exodus of the young to bigger cities; struggle to maintain the mason profession alive, with sufficient work and a transition of knowledge to younger generations; modernization of the traditional houses, with the introduction of water and modern amenities; new constructions in modern styles and with new materials; infrastructure, sewage and water evacuation issues; rising tourism.

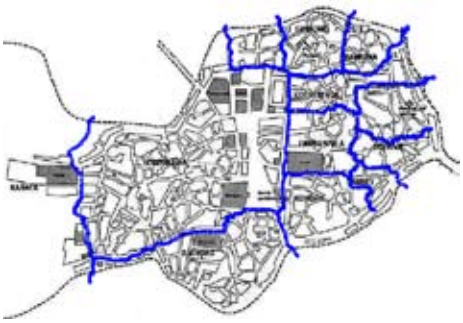
In such circumstances, how does Djenné's heritage contribute to the city economy? Can it generate more economic growth for the city, up to what point, and in turn could the city's heritage and economy be in a position to absorb the future expected population and tourism growth?

In March - April 2009, a short survey was conducted (prepared by Kathleen Louw, Getty Conservation Institute), in collaboration with the Cultural Mission of Djenné. The questions were structured to roughly capture the direct and indirect use values of Djenné's built heritage for the year 2008. The survey covered 13 neighborhoods (for rental values, conservation projects), 11 visited cultural sites (for conservation and visitor fee values), and 16 heritage-related businesses (hotels, restaurants, punt transport, art & crafts, masons, guides).

The Djenné test case was aimed to collect data to test the mapping techniques. The survey did not aim to collect data towards the generation of heritage indicators. The objective of the survey was to measure use values of the city's heritage. Non market benefits were not addressed in the survey, but are known to be significant to the city of Djenné. People all over the world care about the existence of the Old Town of Djenné, famous for its earthen architecture and traditional pilgrimage places. Many would be willing to pay something to preserve the option of visiting Djenné at some time. And it is considered as a heritage to transfer to future generations.

Ymoussa Fané, Chief of the Cultural Mission of Djenné, coordinated the survey completion with the local tourism, urbanism and other authorities, and provided digital maps on which the neighborhoods, historic buildings, and business were identified. Teh tables in the next 4 pages summarize the survey responses.

Fig 68
Neighborhoods of Djenné

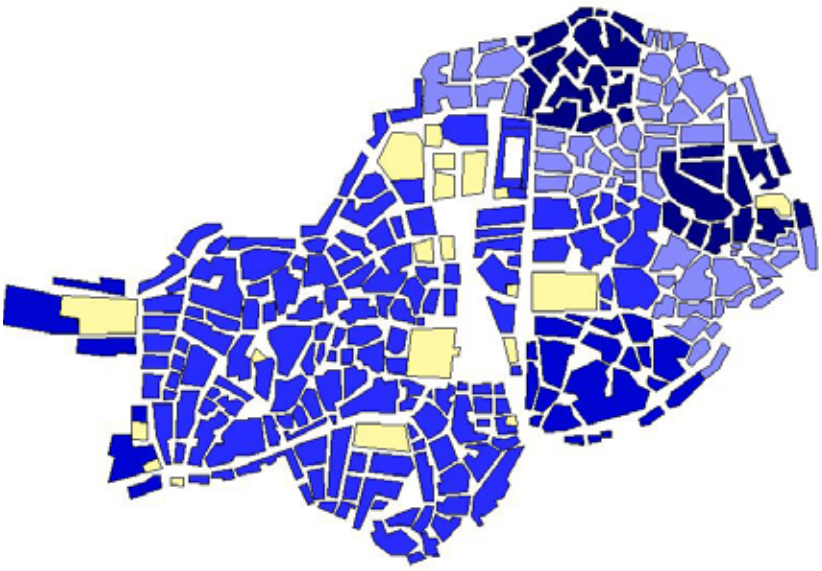


Direct use values for occupancy - Neighborhoods

	Quartiers / Neighborhoods	Annual average rent per house. CFA	% of houses owned by non-residents	Public investment in housing CFA
1	Quartier Sankoré	420,000	2%0%	500,000
2	Quartier Algassouba	300,000	0.5%	250,000
3	Quartier Samsey	300,000	0%	-
4	Quartier Fatmautala	120,000	0%	500,000
5	Quartier Konofia	240,000	0%	-
6	Quartier Dioboro	180,000	0%	500,000
7	Quartier Kanafa	240,000	0.5%	-
8	Quartier Yroboukaina	180,000	10%	3,0000,00
9	Quartier Bambana	120,000	0%	-
10	Quartier Dambugalsorria	120,000	0%	-
11	Quartier Seymani	120,000	0%	500,000
12	Quartier Koytiende	180,000	0%	-
13	Quartier Tolober*	180,000	20%	-

* not on map

Fig 69. Spatial distribution of rental values. The increase in population feeds a continuing demand for housing in the historic city. The average annual rental value (averaged per neighborhood, as data is not available for individual units or parcels) is 200,000 CFA Francs (US$ 400) in 2008. This indicates strong economic values from the heritage occupancy. The highest value is 250% higher than the lowest value.



Direct use values for occupancy - Public buildings

	Visited Djenné sites	Public Investment in 2008 on bldgs CFA	Private Invesment in 2008 on bldgs CFA
A	Tapama	300,000	-
B	Maison du chef du village (Maison des Maiga)	500,000	-
C	Grande Mosquée	-	15,000,000
D	Tombe de Almany Kwantao	1,000,000	-
E	Tombe de St Almany Nabo	100,000	200,000
F	Puits sacrés de Nawa Wangara (Palais Marocain)	-	300,000
G	Tombe du Saint Mahamane	-	25,000
H	Marché	-	-
I	Site archéologique de Djenné-Djeno	-	3,000,000
J	Musée de la Mission culturelle	2,500,000	7,000,000
K	Nouveau Musée de Djenné	-	109,000,000*

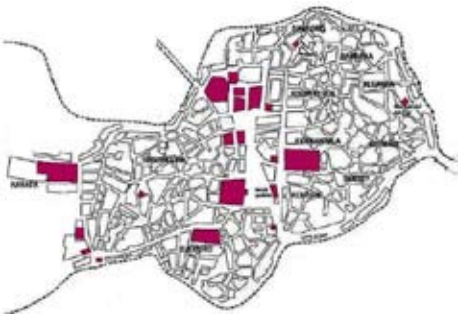


Fig 70
Publicly-owned buildings. They provide an economic collective dimension to Djenné's heritage. Public investment on publicly-owned heritage buildings was estimated at 4.4 millions CFA Francs in 2008 (US$ 88,000). This represents a fraction of total investment on publicly-owned buildings. Private funding was 135 millions CFA Francs (US$ 270,000) in 2008. The two main beneficiaries of private funding were the Great Mosque (Aga Khan Foundation and private Djenné residents), the Djenné Museum (European Union*), and the archaeological site of Djenné-Djeno (Rice University).

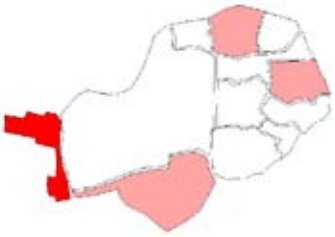


Fig 71
% of housing owned by non-residents. Data shows that an average of 2% of housing units are occupied by non residents. Two neighborhoods, Kanafa (10%), and Tolober (20%), have a higher %.

Fig 72 Volume of investment in the 12 neighborhoods. The emphasis is on central Yroboukaina (30% of total investment), which includes the Grande Mosquée.
Public investment on housing has been a priority of the city authorities, 10 millions CFA Francs (US$ 20,000) were allocated in 2008.

Direct use values for visits

	Visited Djenné sites	Malian visits in 2008	Foreign Visits in 2008	Admis-sion fee CFA
A	Tapama	500	3000	-
B	Maison du chef du village (Maison des Maiga)	20	200	-
C	Grande Mosquée	1000	15000	-
D	Tombe de Almany Kwantao	100	-	-
E	Tombe de St Almany Nabo	5	-	-
F	Puits sacrés de Nawa Wangara (Palais Marocain)	50	3000	1000
G	Tombe du Saint Mahamane	100	-	-
H	Marché	not available		0
I	Site archéologique de Djenné-Djeno	400	2000	-
J	Musée de la Mission culturelle	1000	3000	-
K	Nouveau Musée de Djenné	800	100	-

The number of visits in places open to the public was estimated at 35,000 in 2008, among which 10% from Malian visitors, and 90% from foreign visitors. Heritage is the main reason to visit the city. Yet apart from the Museums, the other visited places (Mosque, House of the Village Chief) are not fully accessible to the public and/or do not have an official admission fee. The Great Mosque is a place of worship, and visits are only allowed on a restricted and sometimes private basis. The volume of admission fees in Djenné is thus far below the visitor willingness-to-pay. Furthermore, the survey revealed there were no investments related to visits in 2008, and no planned investment for the acuisition and presentation of collections to be housed in the new Djenné Museum, financed by the European Union.

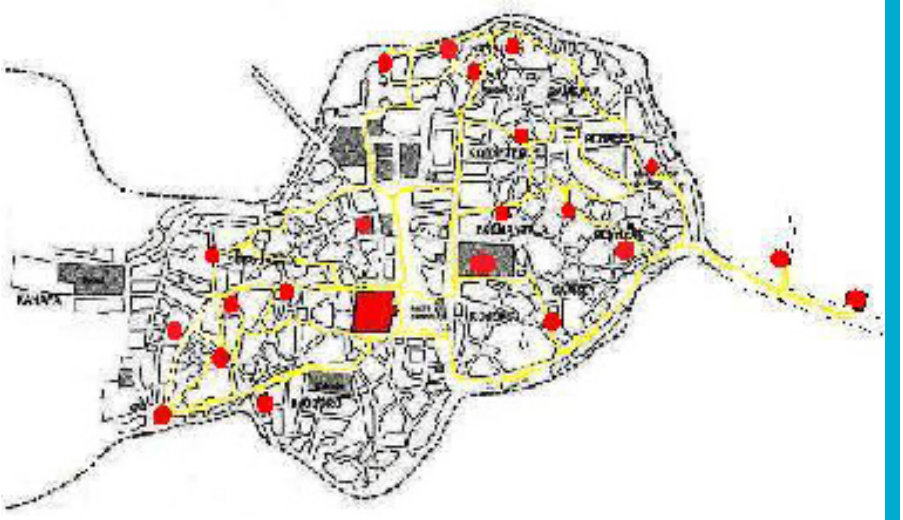


Fig 73
Potentially attractive places for visitors, public and private buildings, accessible inside or not, charging an admission fee or not. The places cover almost the entire area of the Old Town of Djenné. In trying to link the sites together, the map displays tours or visitor walking paths across the city (light yellow on the map). This indicates the highly concentrated nature of the city heritage.

Indirect use values

	Business	Malian visitors A	Foreign visitors B	Number of nighs/ meals (if appli-cable)	Sales CFA
1	Hotel Campement	541	1329	2495	62,375,000
2	Hotel Djenné-Djeno	04	1146	1502	37,550,000
3	Hotel Kitakourou	04	173	179	1,790,000
4	Hotel Mafir	0	515	515	12,875,000
5	Hotel Maison des jeunes	-	-	-	-
6	Hotel Pied-a-Terre	-	-	-	-
7	Restaurant Campement	-	-	-	-
8	Restaurant Djenné-Djeno	-	-	-	-
9	Restaurant Kitakourou	-	-	-	-
10	Restaurant chez Baba	-	-	-	-
11	Jeweler S. Kouyate (Sankore)	-	-	-	-
12	Potters	-	-	-	-
13	Embroiderer A. Traore (Baba)	-	-	-	-
14	Guides	-	-	-	-
15	Punt servicemen	-	15,000	-	8,000,000
16	Masons	-		-	-

The survey responses generated locations for the main businesses, and data for four of the six hotels in Djenné (1-4). The total amount of nights in Djenné was 3,712 in 2008, with a large proportion of foreign visitors. This generated 148 millions CFA Francs (US$ 300,000) in annual indirect use values for lodging. It is to be noted that with 15,000 visitors recorded in 2008, only one fifth overnight in Djenné.

A tourist tax is imposed and included in each hotel rate per night, to the amount of 500 CFA Francs (US$ 1,0). The proportion of return of this levied tax – 1,856,000 CFA Francs (US$ 3,712) - into the city economy is unknown.

Other indirect use values include the incomes of 27 registered guides (14) in the city. Over 500 artists, including embroiders (13), jewelers (11), and potters (12), are distributed in all neighborhoods of the city. Acccess to Djenné is contingent on a punt river-crossing fare payable per vehicle or per person (15). River crossing revenue can be extrapolated from the number of visitors (15,000) and the round-trip passage fare of 600 CFA Francs per person. The total sales from punt transport could then be estimated at 8,000,000 CFA Francs (US$ 16,000).

Induced spending includes in particular, among other incomes, the revenues of the city's 200 masons and 100 apprentice masons (16) who made a living in 2008 from the conservation of heritage buildings and the public and private investments made in the built heritage.

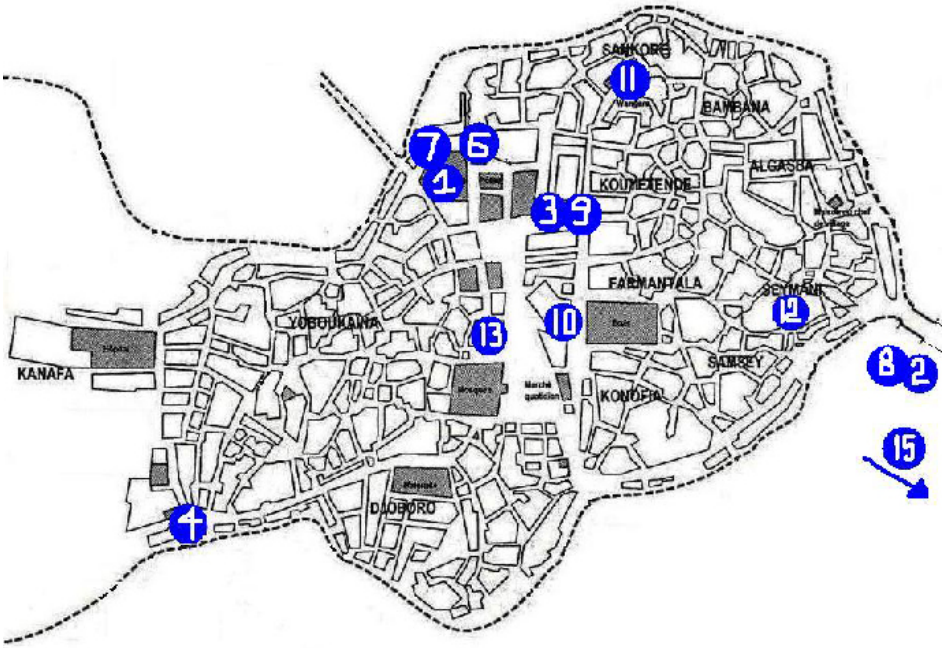


Fig 74
Heritage-related businesses of Djenné.
The main places with estimate indirect use values are identified according to their identifier number. Inside of the city: 8 places for lodging and food, plus the Monday Marketplace. Indirect use values include also the sales of 27 guides.
Outside of the city, there are the punt transportation services, and lodging at Djenné Djenno hotel.

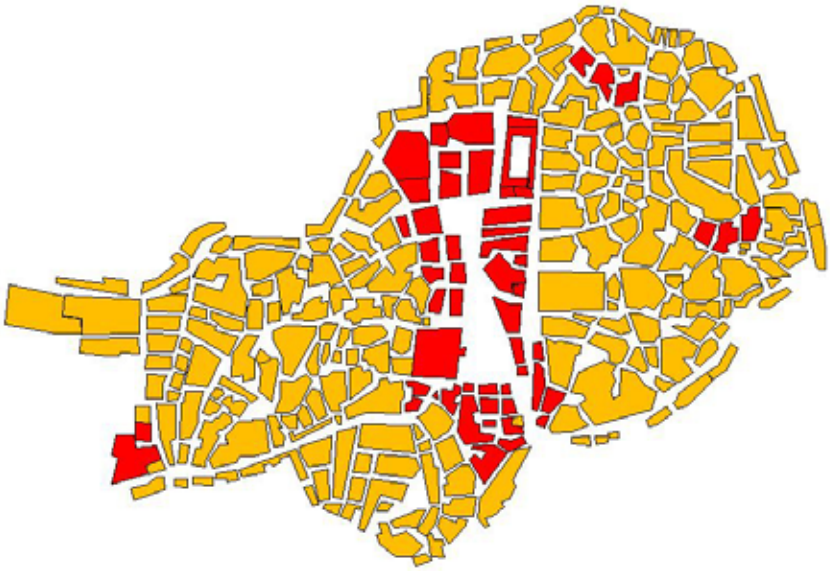


Fig 75
Tentative mapping of indirect use values (for the known business locations). Most of the lodging business is concentrated north of Yroboukaina, not far from the Great Mosque and the Marketplace.

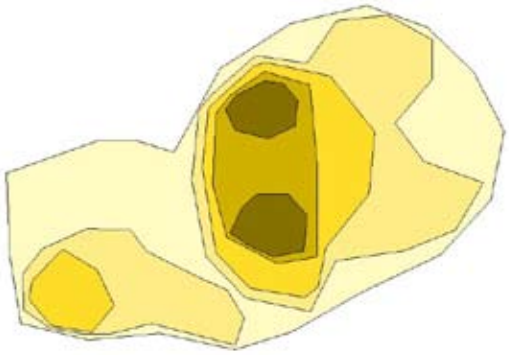


Fig 76
A landscape map combines data displayed in the previous individual maps. The landscape map for Djenné indicates how total heritage use values are distributed across the city, and reveals areas of concentration of revenues (darker tones indicate higher use values). Two darker spots show intensive use values, respectively the Marketplace with the Great Mosque (bottom), and the Campement multiple accommodations area (top). Apart from the location of heritage points of interest, the absence of visits or fees at many of them, and the limited lodging facilities may in part be the explanation for less intensive use values elsewhere.

The survey undertaken in Djenné brings useful indications for further research. Given the time constraints of the completion of this Guide, there were almost no resources allocated for the survey. Nevertheless, enough information was generated to estimate the extent and location of economic values related to Djenné heritage. This test case shows that any World Heritage City, even in an economically poor or developing country, can be assessed for the contribution of its heritage.

Further investigation is needed to build heritage indicators for Djenné. Given the existing data and the city's manageable size (Djenné has approximately 20,000 inhabitants in its historic center and surroundings), the measurement and the mapping of heritage economic values could be done with high accuracy. The sample survey process would require a small documentation team. After collection, the economic data related to use and non-use values could be processed using a computer database and mapping techniques. This process is light in terms of resources, but represents just the first step in feeding the decision-making process or policy assessments.

Fig 77 Djenné, rooftops

A Guide for Heritage Economics in Historic Cities

4. Heritage Policies

In today's world of predominant market forces (globalization), the debate between supporters of profit-oriented (private) and government-supported (public) cultural activities is on the forefront. Indeed, public intervention remains common in culture, as the collective dimension of heritage implies collective responsibility, which is endorsed by community representatives.

Economists agree that the market system is more efficient in resource allocation, but only to the extent that conditions of fair competition prevail. In the field of cultural heritage and conservation, conditions of perfect competition generally do not prevail. Accordingly, public intervention is allowed to correct dysfunctions resulting from free market mechanisms.

> *Today the market is considered as the most efficient allocator of scarce resources. The forces of supply and demand bring about the most efficient solution to whatever scarcity problem exists. No intervention is needed.*
> *But efficiency can only be guaranteed under strong market conditions. If these conditions are not met and/or if there are market failures, intervention is not only allowed but is required to correct the failures.*
> Arjo Klamer and Peter-Wim Zuidhof (The Values of Cultural heritage: Merging Economic and Cultural Appraisals, in Economics and Heritage Conservation, Getty Conservation institute, page 28)

Efficiency in resource allocation and equity or equal access to major resources are important issues. To create equality of access to culture for everyone, public authorities need to take an active part in heritage management. City administrators can act in various capacities: as owner and caretaker of heritage buildings, as manager of heritage-related cultural activities, as levier of local taxes, provider of public subsidies or fiscal incentives, and as initiator and in charge of the implementation of urban and legal regulations.

Fig 78
The city of Ballarat, in Victoria, Australia, is well-known for its history and has retained most of its Victorian era heritage, composed of public and private listed buildings. Among many other cities, Ballarat experiences the fact that local government matters in heritage conservation. The City Council manages the heritage by listing places of importance and undertaking heritage assessments, offering heritage loans and grants, and maintaining Council-owned buildings within the heritage overlay.

A direct intervention by city, regional or national authorities in heritage management or conservation is measured by the ensuing local expenditures (local public consumption and investment), which are part of the macroeconomic aggregate demand for the heritage.

An indirect public intervention on the heritage would be any decision taken by authorities that has an impact on C, X or I. Therefore, a macroeconomic policy towards heritage can involve direct and indirect public intervention.

Macroeconomic decisions aim to maintain equilibrium between the components of the aggregate demand. Macroeconomic values, as described in the heritage-matrix (see Part 1), allow to measure the relative shares of the demand for heritage. Such information gives insight into the economic features of the city economy. The illustrated examples show how typical situations appear on a specific pie-diagram.

Fig 79
Coro, Venezuela, WHC since 1993. Unesco reports that heavy rains caused severe damage to a great number of structures in 1995, and that the situation was aggravated by the deteriorated condition of numerous historic structures. The city was then listed as world heritage in danger. Lack of sufficient conservation and maintenance initiatives to improve the situation equate to a low investment share in the pie-diagram.

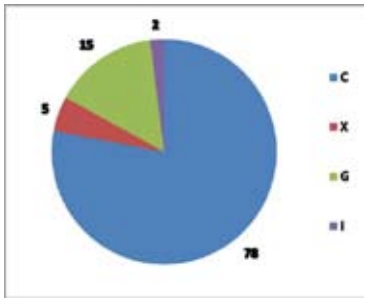
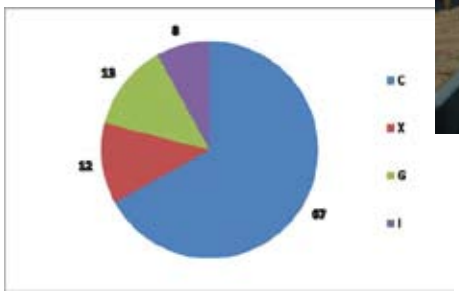


Fig 80
Marrakesh, Morocco, WHC since 1985. Originally an affordable tourist destination, the city has experienced a booming development of its real estate market, amplified by speculators and wealthy foreign buyers. Housing sales reached over US$ 4 Billion between 2003 and 2007. As a result, the share of non residents inside the Medina population has increased (as an indicator, 2% of the Medina population are non-resident French owners). The share of external consumption in total demand is high in the pie-diagram.



In historic cities, the macroeconomic decision-making is often distributed between local government and upper-level public governance. This impacts fiscal and budget management, and heritage management and conservation. Ultimately, the city administration is the authority politically committed to improve the quality of life in the city, and welfare of its inhabitants. It is responsible for enhancing its heritage by improving its economic values in a context of sustainable development. From a macroeconomic perspective, the city administration can increase economic values by increasing the aggregate demand for the heritage.

Examples of macroeconomic policiy initiatives towards growth of economic values of heritage:

Non use values	Advertise the city heritage to its own residents. Make the population aware of the cultural values of their heritage			
	Domestic consumption (C)	External consumption (X)	Public expenditures (G)	Private investment (I)
Direct use values for occupancy	• Boost real eastate market. • Promote rehabilitation of old buildings • Maintain housing affordibility • Develop social housing program.	• Attract new home owners from abroad. • Give incentives to initiatives from abroad that revitalize the city heritage.	• Manage publicly-owned buildings and monuments • Stimulate conservation works through subsidies • Redirect property tax to conservation.	• Promote conservation through fiscal incentives (income tax deductions, property tax exemption,...). • Encourage corporate sponsorship activities.
Direct use values for visits	• Encourage open access for visit to privately-owned heritage buildings. • Evaluate pricing and taxes.	• Attract more tourism. • Evaluate categories of cultural tourism. • Advertise the city (visitor centre, website, etc....)	• Improve the conditions of visits (guides, audio equipment, etc...)	• Promote investments in visit-related activities, throughfiscal incentives.
Indirect use values	• Promote heritage-related events to residents.	• Deelop tourism accommodations (lodging, food and transportation)	• Coordinate city and heritage planning. • Improve city infrastructure and public spaces.	• Attract new businesses and investments.

The capture of indicators and mapping of economic values can then be used for assessing the implemention of such macroeconomic policies. They help to:

- Identify and measure the economic returns of conservation decisions;
- Visualize the geographic impacts of conservation projects;
- Guide city authorities or heritage caretakers in their assessment/implementation of conservation projects;
- Adopt a comprehensive approach to site management in urban context.

Heritage often does not cover the entire area of the city, but appears as a historic district or a historic center. This does not imply that the measurement of economic values has to be restricted to that particular cultural area, or to the buffer zone. The relevant economic area is the heritage Hinterland, which does not always match with administrative boundaries. Macroeconomic policies aim to keep as much economic benefits inside this relevant area by reducing leakages.

A historic city loses use values when residents drive out of the city for shopping, when tourists cannot find lodging or dining in the city, when activities in the city are managed by non-resident individuals or companies, when goods and services are imported, when conservation jobs go to non-local workers, when tax on heritage properties or admission fees do not benefit to the city budget.

Leakages do not reduce heritage economic values, they just displace them, and shift to other beneficiaries. A solution is either to redirect values to the benefit of the city, or measure the magnitude of the leakages. A better knowledge of these magnitudes (for example, how much fiscal revenue is generated by the city heritage to the benefit of the national budget) can help city authorities in political negotiations with other levels of government. Other means are increasing the propensity of inhabitants to consume inside the city, reallocating tax income (transfer payments, public expenditures, investment,...), maintaining jobs in the city and enticing businesses to stay in the city.

Fig 81
Macroeconomic leakages are known to be significant when the relevant entity is small. But large countries can face similar issues of keeping heritage economic values from going abroad. Tourism revenues in developing countries are an illustration of leakages, when the lodging or transportation activities are managed by international corporations, with very little local economic impact. UNESCO experts developed years ago a study on the financing of the Abu Simbel conservation project (Egypt, 1964). Leakages were large, hence reducing the benefit of the project for the Egyptian economy. The total cost of the project amounted to US$ 41,8 millions for its completion. Foreign currencies were needed to finance US$ 27,4 millions of the project, or 66% of the total cost. Egypt could only finance this foreign debt with an increase in tourist visits and expenditures.

> *The idea of what constitutes heritage has extended from individual buildings and monuments to much greater ensembles of human creations, such as cities and landscapes – many now protected as World Heritage Sites. Heritage professionals have had to make the transition from managing and conserving one building, where the protection of the monument was the principal objective, to dealing with places in which the heritage is only one among many elements of a living and evolving environment.*
> Marta de la Torre (Heritage Values in Site Management. Four Case Studies, Getty Conservation Institute, 2005, page 4).

The public or collective nature of the heritage justifies government intervention on behalf of its citizens. Coupled with macroeconomic principles, heritage policies include direct intervention on public buildings, monuments and infrastructures, the implementation of economic and fiscal incentives, or the design of regulations. Such policies present a difficult challenge in historic cities, because of the variety of stakeholders whose decisions inevitably interconnect.

City authorities have a key role in bringing stakeholders together, finding solutions to conflicts between stakeholders, and implementing policy trade-offs. Heritage conservation in historic cities is the best example of policy trade-offs in a macroeconomic perspective. Increasing non use values with an improved external image for the city, increasing use values with economic incentives, reducing macroeconomic leakages, are all actions that contribute simultaneously to the preservation of the heritage and to the sustainable development of the city. But they can only be accomplished if a consensus exists between stakeholders of the city's heritage.

Heritage stakeholders include local and city governments, tourism management, individual inhabitants, local business, investors, heritage administrators, conservation project managers, site managers. The need for consensus and for policy trade-offs needs to be a city objective mandated by the global environment. In World Heritage Cities, stakeholders include the national community, the international community represented by UNESCO, and future generations.

Fig 82 The historic city of Carlisle, UK, is part of the Hadrian's Wall Management Plan. "Access, tourism revenue, tourism impact, agricultural viability, and economic development – issues that form the social context of conserving the Wall – have been discussed and debated since the 1970's. The management plans have grown progressively more detailed and proactive in dealing with these diverse issues that constitute the social context of the Wall's conservation, and integrating them with the more heritage-centered values and issues". (Getty Report, op. cit., page 193).

Site management in historic cities needs to be a flexible and dynamic process. Many elements linked to the environment will not remain unchanged over time, and it is critical to make site management consistent with changes in the broader context. For instance, when tourism is at stake, related decisions on site and visitor infrastructures need to be consistent with global trends of tourism or consumer behavior analysis. A decision to limit the number of visitors to a monument located in a historic center, can be ineffective if tourism continues to grow in the city as a whole.

If a historic city faces a growing trend of tourism, and faces the possible decision to put a quota on the incoming number of visitors, who approves or disapproves that proposition?
It is noteworthy to realize that a same category of stakeholders can gain and lose from more incoming visitors, depending on the impact of this decision on their own individual situation. Inhabitants will approve the decision if the impact is keeping or maintaining their own job, and will disapprove the same decision, when their own employment is not at stake. The policy trade-off is to balance employment with an improved or deteriorated quality of life.

Stakeholders	Economic objective	Impact of the decision	Approve or disapprove
Site managers	Sustainable development of the site	Less visitors to manage	Approve
Conservation project managers	Heritage conservation	Less deterioration	Approve
Visitors	Satisfaction from the visit	Restriction on visit	Disapprove
Inhabitants	Quality of life	Noise	Approve
Inhabitants (local workers)	Jobs/income	Loss of jobs	Disapprove
Local businesses	Sales/income	Loss of income	Disapprove
Local government (fiscal policy)	More fiscal revenues	Less taxes on visitors	Disapprove
Local Government (cultural policy)	Heritage protection	Less deterioration	Approve

Fig 83
Since Bamberg, Germany, has been designated as WHC in 1993, This medium-size city (70,000 inhabitants) attracts 300,000 tourists per year who stay overnight. The number of day visitors is estimated 1,5 million. "*Conflicts on the pavements and streets because of crowds of tourists and motorists clashing in the medieval narrow streets are the result during peak season. (...) The character of World Heritage Cities with their condensed and concentrated fields of conflicts demands a new integrated management process and management structure.*" (Matthias Ripp, WHC in the Conflict between Tourism and Heritage Preservation: the Example of Bamberg, Organization of World Heritage Cities, 2004).

Acting as macroeconomic policymaker, city authorities need to collect information to feed the planning and managing of heritage conservation. The primary responsibility of city authorities is to coordinate the successive steps of the information process: collecting and producing data, recording and processing data, updating data, communicating and sharing data with stakeholders.

The objective of heritage economics is two-fold:

- undertaking an assessment of the heritage contribution to growth and welfare in the city, and
- feeding a decision-making process when heritage conservation is at stake.

A heritage economics-related database and information system contributes to achieve both objectives.

The first objective aims to monitor the cultural heritage in the city, in assessing its economic values, and in analyzing the nature, the local distribution, and the evolution of such values over time. Heritage indicators and maps are key-elements in this analysis. They can display excess or lack of some types of values, unbalanced distribution of values across the city, or values not in phase with sustainable development.

Fig 84

The above maps (Fig 84) illustrate the evolution over time of tourism-related indirect use values. The ratio of tourism related sales in total sales is used as an indicator of the increasing dependency of local business to tourism. Darker tones display higher percentages of sales. The maps show survey results made in 1995 and 2002 (partially fictional data).

The second objective aims to feed the planning and decision-making process, and in particular investment appraisal techniques applied to conservation. Heritage indicators and maps provide useful information to assess the magnitude of impacts expected from projects. Project evaluation includes several methods: cost-benefit analysis (CBA), or multi-criteria analysis (MCA) – as introduced in the following pages.

Cost-Benefit Analysis (CBA) can be used to assess the impacts of conservation projects on the community. A full analysis would have to encompass all relevant externalities and spillovers, the general objective being to ventilate all costs and benefits on the various stakeholders in the project. Different scenarios for the project (or different projects) can be analyzed comparatively.

> *For CBA to be implemented, the values of all the costs and all the benefits arising from an investment need to be estimated, added up and weighted up to give a net value. Costs are more easily identified and measured than benefits. For instance, in terms of costs, it is comparatively easy to see what a property costs and what it costs to maintain and run it. The benefit side of the equation is more difficult to measure. Defining and measuring the benefits is really the cutting edge of the application of CBA in heritage contexts.*
> Jeff Bennett (Cost-Benefit Analysis and the Value of Heritage, in "The economics of heritage. Integrating the costs and benefits of heritage into government decision making". National workshop, October 2007, Canberra, Australia).

Governments need to use CBA to assess the social impact of their policy actions, and to show how publicly-driven conservation projects can improve the net social benefit of the community in historic cities.

There are four steps in conducting a CBA:

1.- List the economic agents or stakeholders involved in the project (promoter or owner of the site, off site landowners, local authorities, visitors, passers-by, employees or people directly or indirectly affected by the project).

2.- Define the project outcomes for each category of stakeholder: positive outcomes (use and non use values, profit, prestige, increase in real estate value, admission fees, tourist expenditures, heritage values,...); negative outcomes (cost of removal, rent increase, noise, pollution,...). There should be no double inclusions, such as factoring admission fee as revenue for the owner of the monument, but also as expenditure for the visitor.

3.- Measure the costs and benefits. Stakeholder's gains or losses need to be expressed in monetary units to be comparable. When two or more options for a project are compared, we can measure the alternative magnitude of an impact. For instance, we can argue that the aesthetic value attached to one option of the project is lower or higher than the value attached to another option of the project.

4.- Add up costs and benefits and calculate the net value of the project. When multiple options for a project are compared, CBA aims to rank options, starting with the one that is the most profitable to the community. Distributive effects are only partially taken into account with CBA analysis. Even if the net value of the project is positive, some stakeholders can suffer negative outcomes from the project.

Though many CBA have been undertaken since 2000, very little has been applied strictly in a context of historic cities. In 2005, the Getty Conservation Institute published a volume on "Heritage Values in Site Management. Four Case Studies" (edited by Marta de la Torre). As the Report indicates, "As heritage becomes ubiquitous, the amount of resources needed for its care becomes significant and has to be considered in the context of other possible investment. In order for this to be done responsibly, there need to be tools that measure the full value of heritage, and not only monetary contributions" (page 8).

Fig 85
One of the four case studies is Chaco Culture National Historical Park (CCNHP). Although not an illustration of historic city, the CCNHP case study examines the values of the site, and how these values are taken into account in the site's management policies and strategies. There is no explicit CBA in the article, although all elements needed for such a study are documented.

The following table demonstrates how the site's management elements can easily be extended into a CBA analysis, with stakeholders, respective outcomes from the project, and costs and benefits.

Stakeholders	Items	Costs (USD)	Benefits (USD)
Professions & researchers	Non use values derived from research		(b)
Native American tribes	Trade of artifacts	(c)*	(b)*
	Cattle and sheep grazing	(c)**	
State, county, city, government agencies, and tribal governments	Management and protection	(c)	
Neighbors	Local jobs		(b)
Local land owners	Use of the land and underground resources	(c)***	
Tourism agencies	Increased business		(b)
Visitors, campers, & other recreational travelers	Recreational activities	(c)****	(b)
Local business (food, lodging)	Increased business	(c)****	(b)
"New age" religious followers	Enjoyed open space		(b)
The general US public	National heritage prestige		(b)
The international community as represented by UNESCO			(b)

* Financial benefits from sale are matched by looting of sites

** The Navajo used Park lands for their herds and flocks for centuries

*** Unrealizable economic benefits from lands protected as national parks

**** Cost, if tourism development not sustainable

Multi-criteria analysis (MCA) and multi-objective decision models have received much attention recently. They appear to be a new opportunity to arrive at a balanced analysis of all facets of modern planning problems, in particular because many intangible factors such as social effects and environmental repercussions can be taken into account.

> *MCA has evolved from a mechanism for the selection of the best alternative from a set of competing options, to a range of decision aid techniques. MCA now supports the structuring of a decision problem, the exploration of the concerns of decision actors, the evaluation of alternatives under different perspectives, and the analysis of their robustness again uncertainty. At present, MCA comprises a wide set of tools, but MCA is especially a way of approaching complex decision problems.*
> Peter Nijkamp (E. Beinat and Nijkamp P., Multicriteria Analysis for Land-use Management, Kluwer Academic Publishers, 1998, page 9).

Instead of valuing the various project outcomes in monetary terms, this non-monetary evaluation method takes into consideration the multiple dimensions of a decision problem. Project effects are addressed in their own dimensions, and a weighing procedure is used to compare or assess the various project effects against each other. Clearly, the weighing procedure depends on the relative priorities attached to the various decision criteria of the project plan. Such a method is therefore called a multi-criteria method.

> *These methods can be seen as a meaningful complement to traditional evaluation methods such as cost-benefit analysis. They do certainly not replace cost-benefit analysis, but offer a wider complementary perspective.*
> Peter Nijkamp (P. Nijkamp, Bal, F. and Medda, F., A Survey of Methods for Sustainable City Planning and Cultural Heritage Management, Research Memoranda 1998-50, Vrije Universiteit, Amsterdam, 1998, page 5).

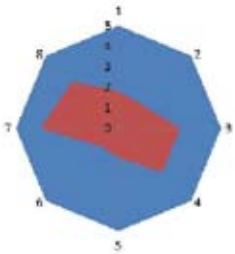
Examples of these methods are the trade-off analysis (designed to determine whether one alternative project is better than another, given the same set of goals), the goal-achievement analysis (based on an aggregate index of achievement for each individual plan), the expected value method (assigning a set of weights to the outcome of a certain project), the discrepancy method (ranking alternative plans according to their relative weighted discrepancy with respect to the optimum plan) and the concordance analysis (based on pair wise comparison of alternatives).

Any of these procedures could be fruitfully applied to cultural built heritage. The major advantage of these methods is that data requirements are limited and can be of qualitative type. For example, one can evaluate the subjective outcomes of alternative projects via expert opinions (questionnaire survey) and logical reasoning.

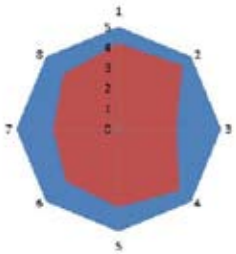
What follows is an illustration of MCA, applied to the Cointe Observatory built in 1881 by the University of Liege, and now ocated in a park, south of Liege, Belgium. It is a landmark of industrial prosperity and scientific interest, with cultural significance. Three options for the rehabilitation of the building were tested with MCA: Housing (H), Art gallery (A), Storage space for archeological service (S). Criteria were defined to assess the the optimal rehabilitation option, as far as the stakeholders and the community at large were concerned (inhabitants, landowners, visitors, city,...). Each member of an expertise group ranked the proposals with a score between 1 (=far from optimal) to 5 (=optimal). The average results are presented in the following table.

Criteria and ranking scale (from 1 to 5)	Average scores		
	H	A	S
Social - From private (1) to community oriented (5)	1.8	4.2	1.2
Social - From low educational value (1) to high educational value (5)	1.6	4.4	2.0
Urban - From high traffic (1) to low traffic (5)	3.0	2.8	4.0
Urban - From low density of people (1) to high density of people (5)	3.0	4.2	1.2
Institutional - From private management (1) to public management (5)	1.4	3.8	4.4
Economic - From market system (1) to centralized coordination (5)	1.2	3.6	5.0
Environmental - From disruptive (1) to respectful (5)	3.8	3.2	3.2

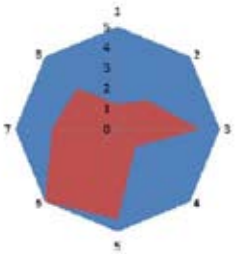
Fig 86
Average scores are calculated and visualized by means of a Spider model. The model is drawn with 8 axis, one axis for each criteria. The blue polygon indicates the optimal solution (highest score for each criteria). The red polygon is drawn with the average scores, its size indicating how close the option is from the optimum. Comparative sizes of resulting areas indicate a ranking for the rehabilitation options: Art gallery (hifghest scores, largest area), Storage for archeological service (medium), and Housing (smallest area). MCA undertaken by L. Albers, B. Fogarasi, A. Hellebois, T. Onaka, and B. Plevoets. Raymond Lemaire International Centre for Conservation, KU Leuven, 2008 (Team project, Master program).



Housing



Art gallery



Storage

A Guide for Heritage Economics in Historic Cities

5. Practical Guidelines for conservation projects

Decisions related to heritage conservation should not based solely on economics. But economic values are part of any comprehensive assessment of a historic city's heritage. The logical sequence of steps and tasks in heritage planning and management should include the economic values assessment. Conservation can be coupled with macroeconomic policy tools, and evaluation of conservation projects in historic cities should include economic data.

This section aims to describe how the economic tools developed in this guide can help conservation project assessment. It is not a complete study of a project, nor does it involve any cultural or historical value assessment. It exemplifies how heritage economics (indicators and maps) can be integrated in project conservation methodology.

The following tables illustrate the successive steps of the process in the case of an fictional project in the historic city of Carcassonne, France: the restoration of a group of buildings, with improvement of the surrounding public spaces and infrastructures.

Fig 87 shows the city map, the restoration area (in green) and the larger area (in red) where immediate project impacts can be expected. (digital map of Carcassonne, France)

The first step is to identify the stakeholders of the project and the impact expected from the project. Table 1 lists the different stakeholders and impacts. Impacts can be positive (increase in property values) or negative (increase in property tax). They can be related to conservation works (disturbances due to the works) or to the project at completion (improvement of housing quality). Impacts are also expressed as use or non use values, and as macroeconomic values.

Table 1 – Identification of stakeholders, impacts, and values

	Stakeholders	Impact of the project	Values	Macro values
1	Owners of buildings on site	Increase in property values (+)	DUO	C
		Increase in property tax (-)	DUO	C
2	Nearby owners of buildings	Maintain /increase in property values (=/+)	DUO	C
		Increase in property tax (-)	DUO	C
3	Residents /occupiers on site	Increase in occupation values (-)	DUO	C
		Disturbance during works (-)	NU	
		Improvement of housing quality (+)	NU	
4	Nearby residents /occupiers	Maintain /increase in occupation values (-)	DUO	C
5	New /external residents	Cost for new acquisition (-)	DUO	X
		Improvement of housing quality (+)	NU	
6	Developers/financiers	Increase in development profits (+)	IS	
7	Local contractors	Increase in profits (+)	IS	
8	External contractors	Increase in profits (+)	IS	L
9	Conservation specialists	Maintain /increase of cultural value (=/+)	NU	
		Increase in jobs /income (+)	IS	L
		Increase experience and knowledge (+)	NU	
10	Local craftsmen	Maintain skills (+)	NU	
		Increase in jobs /income (+)	IS	
11	Local workers	Increase in jobs /income (+)	IS	
12	External workers	Increase in jobs /income (+)	IS	L
13	Visitors	Enjoy visit (+)	DUV	
14	Tourists	Enjoy visit (+)	DUV	
15	Passers-by	Enjoy new place in town (+)	NU	
16	Site managers	Increase in visitors (+)	DUV	C
		Increase in admission fees (+)	DUV	C
		More operational costs (guides,…) (-)	IS	
17	Tourism agencies	Increase in business (+)	IUV	
18	Business on site	Increase in sales (+)	IUV	
		Disturbance during works (-)	NU	
19	Nearby business	Maintain /increase in sales (=/+)	IUV	
20	New /external business	Cost for new investments (-)	IS	I
		More business opportunities (+)	IS	
21	Urban services	Increase in business (+)	IUV	
22	City government on site	Cost for new infrastructures (-)	IS	G
		Increase in property tax (+)	DUO	
		Increase in revenues (budget) (+)	IS	
23	City government /taxpayer	Direct cost /Subsidy for the works (-)	IS	G
		Increase in revenues (budget) (+)	IS	
24	Central government /taxpayer	Direct cost /Subsidy for the works (-)	IS	G
		Increase in revenues (budget) (+)	IS	L
25	National community	Increase in existence /option values (+)	NU	
26	International community	Increase in existence /option values (+)	NU	
27	Future generations	Increase in bequest value (+)	NU	

Notes:

NU=non use values	C=private consumption	(+)=positive impact
DUO=direct use values for occupancy	G=public expenditures	(-)=negative impact
DUV=direct use values for visits	I=private investment	(=)=neutral impact
IUV=indirect use values	X=external consumption	
IS= induced spending	L=leakages	

Economic information must be collected to measure the impact of the project on stakeholders. Given the types of values to which impacts are related, heritage indicators are selected (the illustrative dashboard in Part 2 provide examples of such indicators). Indicators analysis is undertaken separately for each category of stakeholders. This analysis is coupled with a reading of maps that display and visualize the same economic information. Impact assessment is based on indicators status (from very negative, to very positive).

An example of impact assessment related to the owners of buildings on the site (#1 in Table 1) follows. The project will have an impact on the owners of buildings located on site (increase in property values, coupled with an increase in property taxes). Impact assessment requires getting information on the probability and the magnitude of the value increase. This is measured with time-series analysis of rental or property values, when statistical figures are available. Alternatively, the impact is assessed with a set of indicators, as suggested below. Measurement and status assessment of indicators (1) to (4) suggest no economic pressure on the housing market, and indicator (5) shows the absence of gentrification.

Indicators	Measurement	Status
(1)Long-term vacancy rate	Very low	+ +
(2)Increase in property values over the last year	Normal increase	+
(3)General housing price index	Low inflation	+
(4)Increase in residents income over the last year	Low increase	0
(5)Housing affordability	Good	+

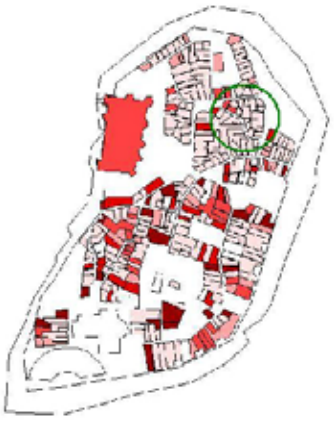


Fig. 88 Data and indicator values can be displayed on maps to visualize the impact across the city. Confirmation of the preceding indicators analysis is visible. Property values are currently lower in the restoration and impact areas (circled in green) than in other neighborhoods.

Table 2 (next page) shows the summarized results of these assessments. Two types of impact assessment are depicted: Column (1) is an attempt to gauge magnitude of the impact; Column (2) is a preference for option A or B of the project (for example, the impact of an extended restoration is compared to the impact of a small rehabilitation).

Table 2 – Impact assessment

	Stakeholders	Impact of the project	Assessment (1)*	(2)
1	Owners of buildings on site	Increase in property values (+) Increase in property tax (-)	+++	A
2	Nearby owners of buildings	Maintain /increase in property values (=/+) Increase in property tax (-)	++	A
3	Residents /occupiers on site	Increase in occupation values (-) Disturbance during works (-) Improvement of housing quality (+)	+	B
4	Nearby residents /occupiers	Maintain /increase in occupation values (-)	- -	A
5	New /external residents	Cost for new acquisition (-) Improvement of housing quality (+)	-	A
6	Developers/financiers	Increase in development profits (+)	++	B
7	Local contractors	Increase in profits (+)	+	B
8	External contractors	Increase in profits (+)	0	B
9	Conservation specialists	Maintain /increase of cultural value (=/+) Increase in jobs /income (+) Increase experience and knowledge (+)	+	A
10	Local craftsmen	Maintain skills (+) Increase in jobs /income (+)	+++	A
11	Local workers	Increase in jobs /income (+)	++	B
12	External workers	Increase in jobs /income (+)	+	B
13	Visitors	Enjoy visit (+)	++	A
14	Tourists	Enjoy visit (+)	++	A
15	Passers-by	Enjoy new place in town (+)	+++	A
16	Site managers	Increase in visitors (+) Increase in admission fees (+) More operational costs (guides,…) (-)	+	A
17	Tourism agencies	Increase in business (+)	++	B
18	Business on site	Increase in sales (+) Disturbance during works (-)	+	A
19	Nearby business	Maintain /increase in sales (=/+)	0	A
20	New /external business	Cost for new investments (-) More business opportunities (+)	- -	B
21	Urban services	Increase in business (+)	+	B
22	City government on site	Cost for new infrastructures (-) Increase in property tax (+) Increase in revenues (budget) (+)	_ _	A
23	City government /taxpayer	Direct cost /Subsidy for the works (-) Increase in revenues (budget) (+)	_ _	A
24	Central government /taxpayer	Direct cost /Subsidy for the works (-) Increase in revenues (budget) (+)	0	A
25	National community	Increase in existence /option values (+)	+	A
26	International community	Increase in existence /option values (+)	+	A
27	Future generations	Increase in bequest value (+)	+	A

* 0 is a insignificant impact, +++ or - - - is a very significant positive or negative impact.

A summary of all impact assessments is attempted in Table 3. Each sector or each stakeholders group is assessed separately. Results indicate whether the group is globally impacted, positively or negatively. Equity and redistribution aspects inside the group of stakeholders are not explicitly taken into account.

As in the previous table, two types of impact assessment are depicted, magnitude of the impact, or preference for an option of the project. Column (1) indicates that most of the sectors benefit from the project. A negative impact is only observed for the government. When several options for a project are considered, results indicate which option is globally preferred. Column (2) indicates that most of the sectors prefer option A of the project. Conservation specialists have a preference for option B. In the next stage, one inputs these results into the decision-making process. Responsibility for negotiations between stakeholders, trade-offs, and final decision, remains in the hands of the promoter of the project.

Table 3 - Summary of impact assessment

	Stakeholders	Assessment	
		(1)*	(2)
1-5	Sector impact or preference Housing	+	A
6-12	Sector impact or preference Conservation	++	B
13-17	Sector impact or preference Visits	++	A
18-21	Sector impact or preference City economy	+	A
22-24	Sector impact or preference Government	- -	A
25-27	Sector impact or preference Others	+	A

* o is an insignificant impact, +++ or - - - is a very significant positive or negative impact.

This approach is consistent with CBA or MCA developed in the previous Part. Economic data related to the heritage feed the decision-making process and suggest alternative policies for managing and planning.

The amount of resources needed to undertake an economic analysis is often considered as a constraint for many small cities. In fact, much depends on the amount of information required, and of the approach taken for the data collection. An easy and quick assessment can be inexpensive but can provide limited or inaccurate data. A good valuation study requires adequate financial and human resources. Most studies can be undertaken with a limited budget. An analysis based on heritage indicators simplifies greatly the task of collecting and processing data. Mapping techniques are also affordable today. In conclusion, the cost for an economic valuation study applied to a conservation project represents a slight amount of the total cost of the project.

The cost for economic case studies is related to the size of historic cities. Size means surface area of the city (property zone, buffer zone, impact area, area covered by the project), concentration of buildings and housing in areas, number of inhabitants, number of attraction sites for visitors, number of tourists and visitors, volume of economic activities, or economic and political status of the city.

Time is a key-factor in the cost assessment of the project. Data collection by the means of surveys takes time, and must be undertaken adequately. Tourism related surveys will take place during tourist seasons, other sampling techniques require to compare data over time.

As in any financial appraisal techniques applied to investment decisions, conservation project assessment relies on future impacts and forecasted values. The longer the period of time, the more critical the need to build scenarios.

Any project can be broken down into a number of tasks that have to be performed. The estimate of the cost can be assessed on the number of people and work hours needed to perform these tasks, and the equipment needed for processing the data (mainly, computers and software). Such gross estimate can be based on Table 4, and applied to the city taken into consideration, with the use of local hourly rate and prices.

Table 4 on the opposite page presents a template core workplan and ressources budget, for a small city, such as one of the size of Djenné, Mali.

TEMPLATE CORE WORK PLAN AND RESSOURCES BUDGET: HERITAGE ASSESSMENT

Tasks	Resources needed										
	Human resources							Data		Equipment	
	Number of workdays					Hourly rate	Cost	Sources of data	Cost	Hardware/ software	Cost
	Core team	Support staff	Experts	Local surveyors	Other						
Definition of the context of the project											
Economic description of the city	2	3						Statistics / research		Standard office	
Economic policy and the heritage	2	1	2					City meetings			
Total	4	4	2				$4,500		$1,200		$800
Data collection on economic values											
Identification of non-use values	1	3		10				Survey		Field equipment	
Estimates of direct use values	1	2		10				Statistics / Survey			
Estimates of indirect use values	2	2		8				Statistics / Survey			
Estimates of induced spending	1	2		4				Sampling		Stat. software	
Macroeconomic data	1	1						Official statistics			
Total	6	11		32			$22,000		$2,000		$1,200
Strategic analysis											
Opportunities and threats	1		2							SWOT Model	
Total	1		2				$1,600				$600

TEMPLATE CORE WORK PLAN AND RESSOURCES BUDGET: PROJECT IMPACT ASSESSMENT

Economic assessment of the project											
Delimitation of impact area	1		1					Digitized data			
Identification of stakeholders	1	1						City meetings			
Heritage indicators	1	2						Collected data		Dashboard	
Mapping	2	2	1	6				Collected data		GIS software	
Impact assessment	2	2						Collected data			
Total	7	7	2	6			$12,500		$3,000		$2,500
Report and discussion											
Suggestion for policy guidelines	2		2					City meetings			
Follow-up and monitoring	1	1						Collected data		Database	
Total	3	1	2				$3,000		$1,000		$800
Grand Total = $ 56,900							$43,600		$7,200		$6,100

Conclusion

In the last page of the report *Assessing the values of Cultural Heritage*, published by the Getty Conservation Institute in 2002, David Throsby sees case studies as the next stage of the research. He suggests "The key task(s) of the case studies will be (...) to arrive at an overall conclusion integrating the economic and cultural values of the project".

A Report was subsequently published in 2005, *Heritage Values in Site Management, Four Case Studies.* These case studies included many references to economic values, but a lack of empirical economic tools flexible enough to suit the variety of economic realities, particularly when applied to historic cities, was apparent.

This *Guide for Heritage Economics in Historic Cities* attempts to bring additional practical tools for decision-makers in the field of heritage conservation. It provides a typology of economic values, indicators, and mapping techniques, as useful inputs to the analysis of conservation in historic cities.

The next stage would be to undertake full case studies in the field using the presented tools and methodologies, and experiment with Google maps (satellite images) as base maps to visualize more effectively how economics and heritage conservation in historic cities are related.

May the present report be an incentive to make this happen.

Author biography

Christian G. Ost is an economist with extensive experience in education, educational institution management, and economics of conservation.

He holds a Ph.D. in Economics from the Catholic University of Louvain, a Master's degree in Economics from Georgetown University, and a Certificate in European Studies from the University of Geneva. He was Dean of the ICHEC Brussels Management School from 2000 to 2008, after teaching macroeconomics and corporate business cycles there from 1984 to 2000. His Ph.D. thesis dealt with business cycle theory and corporate policy.

He has been furthering the field of economics applied to cultural heritage since the 1980's. He was co-author with Raymond Lemaire of the 1984 report to the European Commission *European Cultural Built Heritage: economic analysis and policies*. He has been a visiting lecturer on the topic of Economics of Conservation at the Raymond Lemaire International Conservation Centre since 1982, at ICCROM from 1984 to 1990, and in other institutions. He chaired the ICOMOS Economics International Scientific Committee from 2000 to 2005, succeeding to Nat Lichfield. He is a consulting expert for the Council of Europe, the European Commission, and recently the Getty Conservation Institute.

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Suggested Readings

This list is not an exhaustive list of material on the subject, but a suggested selection of textbooks, as a useful introduction to topics in economics of conservation, with the emphasis on historic cities. I am grateful to Caroline Cheong, 2008-2009 Graduate Intern at the Getty Conservation Institute, for her literature review on the subject.

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