interministerial mission for quality in public construction

QUALITY IN PUBLIC CONSTRUCTION

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QUALITY IN PUBLIC CONSTRUCTION

PREFACE

All public buildings and other public works are important to society, and it is for this reason that legislators have sought to ensure optimal quality in public construction. Optimal quality depends on the complex relationship between the requirements to be met and the constraints to be observed. The pursuit of quality cannot be limited to the definition of a simple "price-quality ratio", nor can quality be specified in absolute terms: there can be no question of mechanically verifying "quality standards" in order to award a "French public construction quality" certification.

For both new buildings and the renovation of existing ones, successful completion of a public construction project involves duties and rights, institutional and civic responsibilities, aspirations, initiatives, daring and prudence. Skills are also required, of course, and they must be combined in the manner best suited to the project at hand – this is what ensures genuine quality.

Today, without in the least repudiating its deliberations and recommendations of the past 20 years, the MIQCP considers itself in a position to report on its experience and spell out its present convictions.

As an independent, public and interministerial body, the MIQCP has of course no intention of entering into a stylistic debate, and even less of attempting to prescribe an official style of architecture.

This volume is primarily intended for client bodies, which are often at a loss when faced with a construction or development project. Public clients must show that the project is a proper use of public funds. They must provide an appropriate response to society's aspirations and at the same time must comply with town planning, as well as technical, economic and environmental requirements. They must act in such a way that not only permanent and temporary users but also the public at large will appreciate the work and consider it as their own.

The importance of their role may be a source of concern for public clients.

This volume is also for operations managers and all other participants providing advice and assistance to public clients.

It is essential for all participants to be aware of the complexity of the human and technical interactions involved and pay special attention to them, especially since each operation is unique and should be treated as such.

We should also bear in mind he fact that, quite apart from the legal framework France has set up to establish and guide the various actors in their roles, each project is first and foremost a human adventure.

The jointly achieved work and its quality will stem from each participant's ability to listen to others and from recognition of each participant's contribution.

Although the architecture actually produced constitutes an attempt to satisfy vague and unformulated wishes, under these conditions everyone will regard it as self-evident, as a source of surprises and recurring emotion for all.

Is this not the best expression of quality?

Jean-Paul ALDUY
Chairman of the MIQCP

"We do not inherit
the earth from our parents,
we borrow it
from our children."

Saint-Exupéry

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INTRODUCTION

The Interministerial Mission for Quality in Public Construction (MIQCP) was created in 1977, as a result of a strong political drive, for the purpose of identifying and promoting the conditions for high-quality production in construction projects undertaken on behalf of public authorities. This demand for quality marked the end of a period during which the urgency of France's quantitative requirements for public works was used to justify the construction of commonplace or even mediocre buildings.

The creation of the MIQCP accompanied the promulgation of the Act of 3 January 1977, which defined architecture as an expression of culture and declared it to be of public importance. The central government therefore formed bodies for the purpose of raising public clients' awareness of architectural matters and helping them to organise their operations: the MIQCP like the Councils for Architecture, Town Planning and the Environment are the symbols of this political objective.

Since then, the devolution laws have resulted in a proliferation in the number of decision-making centres, with a corresponding increase in both the need and the demand for advice and assistance.

Moreover, the architectural scene had fundamentally changed over the preceding decades. Until the early 20th century, the form of public buildings was supposed to be the outward expression of their institutional character, asserting the distinction between the public and private spheres, and the pre-eminence of the collective over the individual. The architectural vocabulary used was simple and based on "models": models of town halls, schools, railway stations, hospitals and covered markets. Today, however, there is no longer a single dominant style: buildings are becoming ever more individual and more complex. Public clients find the multiplicity of approaches disconcerting, and they find it hard to consider architecture in any terms other than those of complexity, which gives them the impression that it is a world which is closed to them.

The activities of the MIQCP have followed these changes. In its first few years, the MIQCP conducted a series of analytical and reflective studies of the policies of public works ministries in France and abroad, examining both technical and architectural issues. These studies identified, in the stages upstream of the choice of project consultant, the levers which could procure a genuine overall improvement in the level of French architectural production.

Subsequently, the MIQCP introduced some variations in both its approach and the issues addressed. Whereas initially it was strictly speaking only concerned with public buildings, its field of interest is now expanding to include urban development and infrastructure. All of these areas affect the quality of our daily environment, and each of them has an impact on the others.

At various periods, the MIQCP's thinking has been focused on the organisation of public commissioning bodies, on the processes of architectural commissioning, on the tasks of and the interplay among the relevant actors, on the regulatory system and on the minimum conditions for the emergence of architectural quality.

For example, the MIQCP endeavoured to incorporate the notion of quality in the laws and regulations relating to public commissions. It was deeply involved in drafting the decrees implementing the Act of 12 July 1985, known as the MOP Act, which laid the foundations for a genuine balance between individual creativity and general interest. It should also be remembered that this Act originated in the work carried out by Jean Millier, who was chairman of the MIQCP at the time.

Since then, the activity of the MIQCP has been based on this law, which primarily concerns public clients and comparable bodies. It designates them as bearing the responsibility for defining the *"constraints and quality requirements – from a social, town planning, architectural, functional, technical and economic quality perspective, as well as the success of the work's integration into the landscape and environmental protection – relating to the construction and use of the work".*

Once built, the work – for which the public client bears the *"primary responsibility",* fulfilling *"in this role a duty in the general interest which [it] may not lay aside"* – will be architecture, and hence

an *"expression of culture"*, in the words of the Act of 3 January 1977. The Act continues: *"architectural creation, the quality of public works, their harmony with their surroundings, protection of natural and urban landscapes and of France's cultural heritage are hereby declared to be of public importance"*. Thus the MOP Act not only defines the role of the public client but also enjoins it to give the project consultant the task of *"making the architectural synthesis of the programme objectives and constraints, and ensuring that the actual construction complies with the design plans it has drawn up"*.

It can thus be seen that in the current state of French law, overall quality in public works requires involvement on the part of the public client, including in the drafting of the architectural requirements, while implementation is entrusted to the recognised expertise of the architect responsible for *"providing the architectural, technical and economic response to the programme"*.

Although the methods and the involvement of the relevant players are essential, the concept of the intrinsic quality of public buildings is not easily captured, since it is dependent on many varied factors. It is not simply a matter of specifying levels of comfort or equipment, which are relatively easy to quantify, but also of considering the relevance of all aspects of an "architectural object". It is also necessary to determine the resources needed to accomplish this.

Public buildings should be regarded as the result of a complex process, not as finished objects that can be described and analysed via a theoretical grid, which all too often is based on abstract concepts.

If the functions that a building must serve and its required material and physical characteristics are quantifiable, they can indeed be specified in concrete, precise formulations and directives. This is not the case when we come to the art of combining these aspects with intangible factors to form an architectural whole, which – as an expression of culture – will be assessed according to the culturally subjective criteria of the various actors: decision makers, users, critics, the general public, architects, etc.

The purpose of this volume is to provide this intuitive assessment with a basis in more tangible factors and to encourage constructive dialogue. It presents the factors and procedures which ensure quality in public construction.

This volume is organised in three chapters:

- The first addresses the parameters of quality and the values that architecture and urban planning should reflect: cultural, social, urban, aesthetic, utilisation, technical, economic, environmental, regulatory, etc. It concludes by stressing the complexity of these concepts and the great variety of elements that must be united in the architectural act.

- The second focuses on the risk that, during the course of the operation, quality will be compromised by an insufficient grasp of the difficulties of the process or lack of commitment on the part of the actors or workmen.

- The third chapter examines the organisation of the public client, the various actors and their tasks, and the ordering processes to be used to ensure that the resulting construction is of high quality. This chapter is based on the recommendations made by the MIQCP since its founding.

Readers should nevertheless be advised that since all the factors addressed in these chapters involve some non-measurable aspects, it would be completely against the spirit of this volume to use them, even in weighted form, as a means of rating different buildings or projects.

PARAMETERS OF QUALITY IN THE PUBLIC CONSTRUCTION SECTOR

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Seats of civil government, places where citizenship is exercised, community facilities – public buildings both serve and symbolise society. They must not only meet specific requirements but also provide a formal response which is appropriate to the site and its physical, social and cultural environment, while at the same time showing great consistency in their construction and remaining within the project's overall budget.

Architecture is a vital component of the memory of peoples; in the words of the law on architecture, it is *"an expression of culture"*. Architecture is a social art which stands apart from other arts because of a fundamental distinguishing feature: it is intended to meet certain functional requirements (mainly to provide shelter), and the "objects" produced are located at a given geographical site, rural or urban, where they are exposed to bad weather and harmful forces. Auguste Pérret encapsulated this specific feature of architecture as follows: *"of all forms of art, architecture is the most subject to material conditions"*.

For this reason, public buildings cannot be considered in the same light as a painting, sculpture or musical composition. Analysis must precede aesthetic considerations. Quality should be assessed first in the light of the fact that architecture is an amazing synthesis of requirements and constraints, and that it is created in a given space which will be modified by its presence. Architecture must be assessed relative to time and space.

This synthesis is first and foremost a creative work, for it involves the generation of a specific object from ingredients which are both abstract and highly diverse, or even contradictory, thus requiring constant trade-offs. It is a work created by a team (public client and project consultant) in constant communication, where each player has its own responsibilities.

To create this object, the project consultant draws on many branches of knowledge corresponding to the objectives and values listed above: culture, social sciences, urban planning, environmental protection, general and detailed composition (volumes, materials, colours and lighting, etc.), functionality and ergonomics, construction and fitting techniques, cost control, compliance with regulations and standards. Architectural design is a global process.

The individual architect is not the most knowledgeable person in all fields. Whenever the nature of the site or the complexities of the programme require it, the architect may seek the assistance of specialists, whether for functional issues, particular design fields or specific techniques. Nevertheless it is the architect, and the architect alone, who ensures the overall consistency of the other participants' proposals and who is accountable to the public client for doing so. It is also the architect who, in the long term, will be viewed by the public as responsible for a design responding to a collective demand that is not always clearly expressed.

This discussion affords an opportunity to recall how laborious these procedures can be: a project never takes its optimal form immediately, and if public clients sincerely wish to obtain a project of very high quality, they must understand that it is in their own interest to give the project consultant time as well as the physical and financial resources to carry out any research needed to improve the project, and to do so at every stage in its development.

TIME: A FACTOR OF QUALITY

Public clients should adopt Auguste Pérret's saying as their motto: *"time is the greatest artist of all".*

Time for the definition of objectives, expectations and their expression in terms of spatial and technical specifications for the commission. We can never emphasise this point enough in speaking with public clients. A project that begins badly, without due consideration, all too often leads to an inappropriate result which can be very expensive for the community. The programming stage, which is of great importance, should be the moment to make decisions jointly, to win over the various partners by factoring in their concerns and to minimise any conflicts or misunderstandings (e.g. local residents' tooth-and-nail opposition to possible nuisances, or staff whose working habits may be changed by the new building).

Time for design: the "project" is constantly being developed and matured, from the first sketch to final delivery of the building. The client and consultant need this time to test proposals, refine their solutions, and check on the advisability of these solutions. A continual and constructive dialogue is essential. This is an iterative procedure.

Time for appropriation and evaluation: although the spatial arrangement and operation of the building have been imagined with precision, user and building still have to learn to live in harmony. The building is not an inert object: rather, it lives vicariously through its users, and the way it functions will change in accordance with changing requirements, changing user behaviour, and reorganisations.

A lifetime: this is determined by the building's ability to transform itself in order to adapt to technical and human change, without losing its "meaning" in its own context. The true quality of a public building can be evaluated only when it has lived through several decades.

A public building is inseparable from the notion of permanence. It is located in a given place, and although it may be transformed or put to different uses, it remains primarily rooted in a particular environment. Even though it is likely to change, to be taken over or redefined, it should embody this ambition to outlast the fashions of the moment.

Like any other art, architecture serves to inform and bear witness over the long term. Some buildings manage to endure beyond their natural lifespans, owing to the emotion they generate; they become part of our cultural heritage and are recognised as works of the mind.

THE SOCIAL IMPORTANCE OF PUBLIC BUILDINGS

Public facilities constitute a social good. The way they are organised – from the scale of regional development to that of the workstation – helps to govern social relationships. As the expression

"public facilities" indicates, they are meant to serve the public, and the project consultant is only the temporary repository of a social demand or aspiration, entrusted with giving it the most appropriate material form possible.

Moreover, a public building has an impact not only on occupants and users but also on passers-by and on the way the neighbourhood and town function. The quality of its spaces affects the quality of social life and a fortiori has an impact on group and individual behaviour.

By way of example, a schoolteacher's comments on her new classroom indicate the extent to which architectural choices affect the quality of users' lives: *"The children draw great benefit from their environment and the distance from the busy centre of the school: the only sounds we hear are bird songs. The children are calm. They have enough space, and a garden for themselves. They are at ease, confident. I can teach them the rules…"*

The difficulty lies in the fact that the construction must simultaneously provide a specific service to an entire community and give the best service to each individual user.

THE SYMBOLIC VALUE OF PUBLIC BUILDINGS

Public buildings fulfil a variety of functions: governmental, institutional, cultural, service and utility functions, etc. They display the community values, such as sharing and belonging, adopted by the inhabitants of their environment.

In our perception of a building in its site, everything is a sign, and every sign has a meaning. The symbolic value of a building is different for each person, formed when the relationship uniting the sign to the perceiving subject is established: by stimulating the imagination, this value becomes a factor of social life.

Through their expressiveness, their external personalities, their locations, the ways in which they are integrated into their sites, their relationships with surrounding buildings and public spaces which they both generate and inhabit, public constructions create and embody the identity of neighbourhoods and cities, and form the basis for their distinctiveness.

The client is responsible for considering what image it wishes to give to its emerging project. It is up to the client, first of all, to determine the position it will occupy, to decide how much symbolic weight should be given to the future facility. Subsequently, the project consultant responds to these expectations through judicious selection of concepts and through creativity in giving formal expression to these concepts.

THE CULTURAL VALUE OF PUBLIC BUILDINGS

A construction project is first and foremost a matter of thinking in spatial terms, of imagining

human beings in a space: it makes use of materials to build housing, offices or public buildings. It brings together people with highly varied expectations, taking them on a human adventure to provide shelter for a human activity. And when this project involves artful modelling of spaces, volumes and proportions, and harmonious relations among them, it takes on a cultural dimension that transcends the functional. Space, volume, matter and light are the true materials of architecture. Using all these ingredients and starting from a programme which is primarily utilitarian, the architect builds a cultural work, an expression of human thought.

When applied to space and over time, this human thought becomes part of our heritage, a constructed testimony to the existence of human civilisations.

It is by comparing works in the light of the identity of architecture – which itself has a long-term existence – that one may approach the unquantifiable field of aesthetics, which Le Corbusier called *"inexpressible".* Following the copious literature on this subject, we may mention some constituent elements of architectural aesthetics.

Generally speaking, architecture involves the same kind of aesthetic thinking – i.e. the conception of beauty – that stems from the plastic arts: shapes, colours, materials used, and above all the interplay of light and shadow.

More specifically, architecture gives rise to the feeling of harmony. Viollet-le-Duc compared the emotion inspired by architecture to that inspired by music. It also leads to assessment of the value of spaces and the proportions of volumes, whether filled or empty. Mies van der Rohe used to say, when speaking of the quality of proportions, *"It is the most important thing, but we cannot speak of it."* The quality of execution applied to details is also valued: to cite Mies again, *"God is in the details."*

An aesthetic specific to architecture, stemming from rationalist thought, is that of the intelligible relationship between form and function. Le Corbusier, whose views of architecture and urban planning were suffused with rationality but tempered his thinking, spoke of the architect in the following terms: *"It is his judgement, his feeling as an artist which, in the last resort, will never let mechanical methods take sole command."*

A good project goes beyond the functional dimension. It is the architect's duty not only to build well but also to build movingly.

THE VALUE OF PUBLIC BUILDINGS IN URBAN PLANNING

The vast majority of public buildings today are located in an urban context where they have a prominent role to play.

A public building that has no ambition to shape the surrounding city remains inward looking and

relatively ineffective in its political and social role. An architectural work loses much of its significance if taken out of its context.

We distinguish two levels in the environment of a public building, which may be referred to as the "site" and the "approaches". The site is the natural or urban landscape (streets, squares, neighbouring buildings, etc.), which cannot be changed for the new building. The approaches, in contrast, are spaces closer to that building which will be developed in accordance with it.

The site shapes the building: the architect must make the most of the site, exploiting its advantages and attenuating its drawbacks. But once constructed, the building in turn shapes the site through its scale, its forms and its external appearance.

A building's relationship with its site is currently considered a major criterion of a successful project, whether the site is natural or built up. This is slippery ground, however: the current notion of "integration" is in fact not very clear because it embraces several different meanings. Too often, it prescribes mimicry as a means of letting the new building blend quietly into its environment. But this building responds to an agenda different from that which prevailed in forming this environment: are we to build contemporary public buildings using the forms and construction methods of a village habitat designed for rural functions?

For this reason, some prefer to speak of a "balance" between the site and new buildings. This concept is broader and more open to the full accomplishment of the architectural act. The major works of the masters of 20th-century architecture, as well as some fine recent projects, show that a great variety of means can be used to work buildings into their sites.

No dogma or doctrine can be applied in this difficult field. Ultimately, the sensibility of the architect will be the best judge of how to handle this question.

Consideration of a public building in terms of urban planning begins far upstream in the overall process, as soon as the deliberations over its location begin. The reason for this is that the choice of site is of great importance: a poor site, a site that affords no easy or rational access, the presence of nuisances nearby, or unsuitable site dimensions can lead to the failure of the project.

The choice of site, whether urban or rural, reveals the social and cultural values which the client wishes to affirm. The quality of a public building's integration into its landscape may be analysed from several standpoints: the urban planning approach, the architectural approach, the functional approach and the social approach.

- **the urban planning approach:** on the scale of the neighbourhood, the block of offices or flats, or the entire town;

- **the architectural approach:** juxtaposition against the size, architectural vocabulary and composition of the surrounding buildings;

- **the functional approach:** conditions of service by all means of transportation; conditions of approach and localisation in the neighbourhood or the town; conditions of access to the services required for building operation or security; conditions for managing operational conflicts with other activities in the neighbourhood or block; operating conditions for the main services for which the building is used; conditions for reception of the public; safety conditions for property and people; choice of technical facilities; and choice of building materials in line with the way space is allocated and used;

- **the social approach:** the quality of the spatial, aesthetic and functional synthesis will determine whether the building is appropriated by its permanent and temporary users, thus symbolically revealing whether it meets their expectations.

CONTINUITY OF INTERIOR AND EXTERIOR PUBLIC SPACES

A public building is assessed according to the quality of its spaces: obviously its indoor spaces, but also outdoors. The way "inside" and "outside" are combined and the continuity between them reflect the relationship between the public building and the town.

An outdoor public space, through its purpose and its function, becomes itself a kind of "public facility":

- framed spaces: esplanade, square or even "staged" space;
- transit spaces: mall, street, sidewalk, arcade, etc.;
- approach and localisation space: the square leading to interior reception spaces;
- spaces for play, relaxation, light, and landscape, either linked to or contrasting with interior spaces;
- service areas: maintenance, deliveries, refuse, security, etc.

These exterior spaces should be considered at the same time as the interior spaces, and should receive equal attention: the inside and outside are interactive.

This is also the reason why people's response to the reception areas will determine their perception of the institution's identity, and especially their perception of the quality of the services provided there.

Similarly, both inside and outside, attention must be paid to the practicability of walkways (access for those with limited mobility, length of approaches, protection from the weather, waiting areas, etc.).

USE VALUE

When we speak of quality in public buildings, priority is often given to use: spaces in a public building should be designed and handled in such

a way as to ensure the quality and convenience of their use, in a manner perfectly consistent with the tasks performed there, the activities pursued there and the services provided there.

The desired functional criteria very often make up the bulk of the programme. They are often rendered in "mechanical" terms – functional links, surface areas and standards – whereas they should be specified in "living" terms, that is, in terms of utilisation and practices. Indeed, it would be preferable to describe the services which the facility should offer, the people who will use this facility and how they will make it their own, and the public it will reach. Then it will be the architect's job to translate this into space, balancing the various constraints and requirements.

Moreover, the functionalist bias has its limits: human nature is such that made-to-measure and ostensibly practical spaces are not necessarily easy to live in. Conversely, it is often the areas which seemed "to serve no purpose" that engender unexpected but interesting behaviour. Permanent and temporary users must be allowed to take possession of the "architectural object" in their own way; even if the architect has stuck to the programme, users sometimes take it upon themselves to use the structure for an unforeseen purpose, and to invent new rules.

A degree of modesty and restraint is thus necessary, since it is impossible to foresee future changes in the town and in the building's uses.

A public facility should possess this ability to adapt to the rapid pace of change (both functional changes and technological progress) in our society, in its behaviours and its values. It is therefore essential to preserve a degree of flexibility, to leave breathing spaces in the layout to allow for new forms of behaviour.

This precept applies all the more strongly when we come to the issue of renovation and restructuring. What we value in some "old buildings" is that they have managed over the years to undergo a transformation from, say, prefecture to hospital or high school, all the while displaying their unambiguously public character.

Whether it is a question of creating a new building or converting or rehabilitating an existing one, the history of the site must be taken into account. The potential of this history should be assessed with a view to making use of it in the future project.

The present feeds on the past and paves the way for the future.

Quality of use also includes the notion of comfort or convenience: a public facility should be open and accessible to all users, tall or short, handicapped or not. Making a public building convenient for users involves helping each user to understand the building, to find his or her way, to come and go without hindrance or risk, and to feel at ease there.

A public client may also wish to arrange space so as to promote contacts and dialogue, or on the contrary so as to allow a measure of privacy. These are factors that will require choices on the part of both the client and the project consultant.

A concern for user comfort also involves consideration of the physiological, psychological and sociological impact on permanent and temporary users. In particular, this relates to:

- **acoustic comfort,** throughout the building, from the largest spaces (auditoriums or lecture halls) to those which appear most inconsequential (such as corridors and service areas);

- **temperature** and **humidity control** in all seasons, in particular through control of direct sunlight and of natural and artificial lighting: the way light penetrates into a building is a key element of architecture.

These last items assume that the designer is fully conversant with the various techniques available.

TECHNICAL QUALITY

In attempting to satisfy the client's short- and medium-term objectives, the architect will be responsible for determining what is essential (through the spatial design of the building) and for evaluating how to achieve it, both technically and economically.

The project consultant, within the framework of the overall architectural approach adopted, should opt for a construction system, techniques and materials that are capable of providing an efficient, economic and elegant solution to the problems specified in the programme. (This justifies the practice of consulting an architect for all projects – including small projects and so-called technical projects such as the addition of an emergency staircase or the installation of a kitchen – in order to ensure the architectural unity of the work and to find the most suitable solution.)

More precisely, technical quality will depend on:

- the design and selection of building structures;

- the productive and operating quality of the selected building materials and technical systems (heating, ventilation, electricity, low-voltage systems);

- judicious recourse to technical expertise and thoughtful use of innovations;

- whether these choices are relevant to current and future uses, in terms of their suitability to the environmental context and the resources allocated for building management and maintenance); *(See below, "Environmental quality".)*

- an appropriate construction schedule: long enough for proper and supervised performance of the work; short enough for a start-up that allows users to take possession quickly and efficiently.

QUALITY OF EXECUTION

When all the aspects of quality discussed above have been taken into account in the creative process leading to the architectural project, it is time to execute the project, that is, to implement it in the field. Implementation requires the participation of many different workers, who are subject to the quality requirement for the aspect of the construction which falls within the remit of their responsibility. Obviously, the final quality of the building or renovation also depends on the quality of their work; sloppy execution in the final stages should not compromise all the earlier efforts to attain perfection.

In this final stage, the project consultant plays a vital role in supervising the building's construction, right down to the smallest detail. The performance quality expected from the contractors is dependent on the quality of the plans drawn up (or verified) by the architect. For this reason, it is once again up to the public client to establish construction conditions which are liable to ensure the final quality of the work, by granting the project consultant the resources and design time needed.

The client should also consult with the project consultant in analysing contractors' bids in order to select those capable of providing quality work and adhering to the programme. Each trade that is involved in a building's construction should have expertise suited to the specific features of the work, and this should be verified at the bidding stage so as to choose the offer of the most suitable technical guarantees at the best price.

Moreover, where buildings are concerned, the mission which the client entrusts to the project consultant – a mission distinct from that of the contractor (except in the special case of design and construction, where the designer is also the builder) – must necessarily include oversight of contract performance, to ensure that it is in compliance with the plans. This should also be the case for all other types of facilities.

The fact is that owing to the great number of building contractors, extreme vigilance is necessary throughout the construction period to manage the "interfaces" of their work, regardless of how the work is divided up. Even the best experts can be caught out if their know-how is not well coordinated with that of their partners. The project consultant's responsibility for directing the actual construction can therefore be compared with that of the conductor of an orchestra, since the objective of overall harmony impels him to make use of the qualitative resources of the trades brought together for the occasion. These resources, which stem from the experience, traditions and business culture of the building trades, are especially useful in that most public buildings are unique and constructed under a specific programme: their construction thus resembles production of a prototype rather than mass production, with all the consequences which that implies.

ECONOMIC QUALITY

It is legitimate for the client to want quality at a reasonable cost, but this is an issue which requires careful consideration. It is up to the client to decide how to factor in the different values underlying quality, by making choices among the possible options on the basis of their cost and their relevance.

Aiming for "beauty", "functionality" and "durability" does not necessarily entail the use of the most expensive or state-of-the-art products for all parts of the project. Similarly, good proportions are no more costly than bad ones.

A public building is an important asset: too much cost cutting or inaccurate cost projections can be harmful to the service dispensed in it, discourage users from appropriating the building and lead to rapid deterioration, thus undermining the image of the institution at the same time. The client should therefore deliberate over its programming choices in a forward-looking spirit. Subsequently, it will be up to the project consultant to channel the appropriate distribution of investments, in constant coordination with the client and the building's future manager.

Lastly, we must address the notion of the total cost of a project, which includes not only the initial investment costs but also deferred costs for overheads, cleaning and maintenance. Taking all budgeting decisions on the basis of the investment cost alone often leads to subsequent difficulties in managing public properties. Ill-judged savings at the investment stage can later generate cost overruns and human resource-related problems that are not easily overcome. A total cost approach should be initiated right from the beginning of the programming study stage, as it is known that decisions taken at this stage lead to commitments amounting to 70% of total costs.

ENVIRONMENTAL QUALITY

Building with a view to sustainable development: this is not a fuzzy idea intended to bring environmentalism up to date, but a demanding concept to which the political act – since public construction is first and foremost a political act – should make reference.

First formulated in the UN's Brundtland report, the concept of sustainable development was enshrined by the Rio summit in 1992. "Agenda 21", adopted by 179 countries, specifies the actions to be taken to implement the commitment made at this summit.

Historically speaking, the concept of sustainable development arose from the convergence of two overriding concerns of recent decades: the concept of development, which has gradually replaced that of growth, and awareness of the vulnerability of the environment.

France's clients and project consultants alike cannot ignore this change in our thinking on the subject. Public clients in particular, which should

(See MIQCP/PUCA/HQE, "Intégrer la qualité environnementale dans les constructions publiques" ["Building environmental quality into public buildings"], Editions du CSTB, May 1998.)

be careful to set an example, are closely concerned by the objectives of sustainable development, which stem from the combination of increased consideration of the use and preservation of the environment and the establishment of new local democratic processes.

At the project level, the "environmental approach" has three main advantages:

- It requires a comprehensive, crosscutting approach that naturally includes "values" ("targets" in environmental jargon). Although the quest for environmental quality requires technical expertise in areas such as heating and lighting systems and materials science, it has little meaning unless it informs a general approach to building.

- It entails deliberation in the upstream stages of the programme, beginning with the selection of the site, when decisions are being made concerning important issues such as urban transport and the constraints inherent in the site (areas in shadow, exposure to sunlight, wind, acoustics, pollution, etc.). It should be remembered that the initial decisions very often play an important role in determining quality.

- It is impossible to take an environmental approach without considering operating, maintenance and management costs – the "deferred costs" mentioned above, whose importance is often underestimated – at the same time as the investment costs.

It is obviously beyond the scope of this volume to spell out the entire procedure needed to achieve environmental quality, but by way of illustration we may cite the "targets" mentioned above. They may be grouped in three categories.

■ Eco-construction

The objective is to establish harmonious relationships between the building and its immediate surroundings: comprising with the site, study of the impact on urban transport, environmentally-friendly design of outdoor areas, limitation of nuisances, thrifty choices concerning building materials and energy efficiency.

In addition, eco-construction encourages us to consider the building in terms of flexibility, in order to accommodate changes in its use through to its eventual demolition.

■ Eco-management

This category relates to the living conditions of the building, especially to energy-related choices, which are made with a view to their environmental impact and to reducing energy consumption, especially by building climatic considerations into the design.

The same approach should be used for water supply and waste treatment. Generally speaking, the aim is to pay closer and more sustained

attention to management and maintenance problems.

■ Comfort and health

The last category of environmental "targets" covers comfort-related requirements: temperature and humidity control, acoustic and visual comfort. In addition, air quality has become a fundamental requirement, given the new awareness of the risks associated with poor air quality. It is the client's responsibility to provide users with premises offering the best possible health and hygiene conditions.

CONCLUSION: AN ARCHITECTURAL QUALITY

It should be evident, after reading this chapter, that the notion of quality in public construction is many-sided. And since this quality inevitably takes material, visible form in an architectural work, it will be, in the full and entire sense of the word, **an architectural quality.**

It is generally accepted that although architecture is an art, it stands apart from the "free arts" (literature, music, painting, etc.) because of its social implications. Architects, as artists and professionals, place their creativity, talent and know-how at the service of this social function of architecture. The architectural response expected will thus be marked by the architect's artistic personality, and the cultural value of the building by his or her own cultural sensibility.

There is thus not one predetermined architecture that responds to a programme. This is beyond dispute – competitions enable a number of architects to provide different responses to a single programme. It is, moreover, a great advantage to be able to assess different responses to the same basic problem and to compare them in the light of all the constraints and requirements. Quality of architectural expression is, of course, far from being the least important of these requirements.

The competition jury is the practical application of architectural judgement, and it proves that this judgement can in no case be reduced to a list of criteria.

Although we might prefer it to be otherwise, a jury has no completely rational means of reaching a decision. Even though a technical committee has conducted an objective analysis of the projects submitted (surface areas, functional considerations, cost analysis, compliance with regulations, etc.), the jury's actual verdict is shaped during the debate: it arises from the exchange of different opinions and of all the arguments that can be advanced in their favour. It is possible to strive for objectivity even though we know that architecture cannot be reduced to objective terms alone.

It is thus a matter of building a common approach to understanding and judging projects on the basis of a very diverse set of factors, and not of using these factors as a list of weighted criteria for rating projects.

This judgement is the precursor of the opinions of all those who come into contact with the building – users, passers-by, politicians, bureaucrats, maintenance technicians – whose judgements will be based on many different points of view. It reflects the inherent complexity of architecture, which must juggle the parameters, requirements and constraints that define the project and constitute a necessary but insufficient condition for its becoming a work of architecture.

Real architectural quality, however, will show itself in time: the time it takes for users to take possession of the new space, then the time needed for the building to "settle into" its rural or urban landscape.

Under what conditions does this dialogue take place, and with what results? The urban planner for the city of Chicago, R. Banham, used to say that mediocre projects could be built but would lack internal energy, whereas profound and high-quality projects would yield buildings that would be handed down to and adopted by our children.

By its very nature, architecture is not something that can simply be consumed in the short term. It is inherently hostile to the idea of fashion, and architectural quality does not lie in plastic values alone, and still less pictorial values. Its physical and aesthetic durability will be judged according to the test of time.

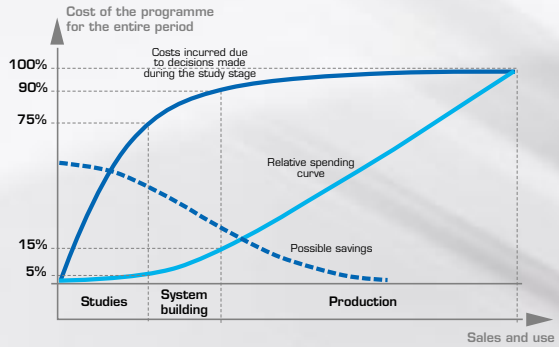
BARRIERS TO QUALITY

2

A construction or development project falls into clearly differentiated stages: studies and design by programmers and the project consultant, then the actual construction and use of the facilities. The closer one is to the downstream end of the process, the easier it is to define and measure quality: building materials, construction methods, certifications, standards, etc.

However, the greatest quality gains can be obtained – and the greatest number of mistakes made – at the upstream end.

The graph below is based on the work of the Association pour l'Analyse de la Valeur (Value Analysis Association). Although it originally concerned the manufacturing sector, where finding a market is a fundamental goal, it may be transposed into the construction sector.



The aim of this graph is to compare the spending curve relating to product development with the cost curve resulting from decisions made during this process. It can be seen that the upstream study costs are low with respect to the importance of the decisions affecting quality. This graph also shows that the gains will diminish steadily over time. The second curve can thus be likened to a quality curve.

At the downstream end of the construction process, lack of quality can be quantified: the Agence Qualité Construction estimates the economic cost of poor quality at about 10% of turnover in the construction and civil engineering sector, or approximately FF 40 billion annually. For the MIQCP, however, there are other quality problems which are equally serious: public buildings and development projects that prove useless, are poorly situated in the urban structure, are detrimental to well-being, etc.

The underlying causes of these quality problems include:

INADEQUATE PROGRAMMING STUDIES

The importance of programming studies is generally recognised today. Skipping this vital stage of the project, estimating a budget and timeframe which do not allow all the necessary studies to be undertaken, neglecting essential consultation of partners – all of these may well create problems for all or part of the project later on. The client needs all the information provided by good programming studies to make well-considered decisions and subsequently to be able to share its choices with the future users of the building.

POOR FINANCIAL PROJECTIONS

The issue of operational financing has two sides: it involves both lining up the financing package needed and the notion of the cost of the entire project.

As to the financing package, few projects today are financed from a single source of funds: co-financing and the search for subsidies are making budget preparation an increasingly complicated process. Finalising a project budget demands a great deal of energy on the part of the public client and requires detailed knowledge of its funding entitlements.

But the issue of operational financing does not stop there, since the budget of a public construction operation is not equal to the budget for actual building plus the budget for design and consulting contracts. The client must also factor in the budget for essential programming studies (pre-operational and operational), the cost of operations management, the cost of the procedure used to select the project consultant and other participants (advertising, procedural arrangements, compensation, etc.), the cost of project communication, the cost of landscaping work in the approaches to the building, and even a specific budget for furniture and fittings and a provision for unforeseen incidents and start-up costs.

It is the client's responsibility to make a realistic estimate of the price of an operation; far too often, an underestimate – intentional or not – leads to misunderstandings among the partners and to adjustments that are detrimental to quality.

Moreover, the cleaning, maintenance and operating costs of the future building should be estimated, in order to ascertain whether the community will in fact be able to afford to operate its building. Buildings are sometimes abandoned owing to a lack of funds to keep them going.

PUBLIC CLIENTS' FAILURE TO ASSUME THEIR RESPONSIBILITIES

The MOP Act sets forth very clearly the responsibilities of the public client, responsibilities which it may not shirk. To be sure, this is a considerable task requiring much time and energy. Although public clients are advised to consult all the relevant experts and obtain all the advice required to bring a project to successful completion, they are still responsible for decisions, choices and trade-offs.

Programmer, operations manager, project consultant and so on have each a role to play within a partnership where the responsibilities of each partner should be clearly defined and adhered to.

The public client must play an active role throughout the process, as the building's users will subsequently hold it accountable for the decisions it makes.

A FRAGMENTED, COMPARTMENTALISED PROCESS

The development of a public construction project is not a linear process. It involves much back-and-forth communication between the partners,

dialogue, adjustments and interactivity at the level of both programming choices and architectural and technical choices in the planning and construction stages.

When the process is too fragmented and the compartmentalisation of the partners too rigid, the project may be the poorer for it, since each actor needs to draw sustenance from the work and research of the others. Dialogue and good communications are essential. This interactivity between the programme, budget estimation and the architect's project is, within certain limits, permitted under the MOP Act.

NEGLECT OF THE TIME FACTOR

We have already pointed out the importance of time to the entire project development and implementation process. In this context, we should bear in mind the special nature of public buildings, whose lifespans are measured in decades and which are often used for several different purposes over that period.

A public client should thus endeavour to spend time on its project and to allow its partners enough time to consider and confirm their options. Project timetables should not be determined by the electoral calendar.

AN UNSUITABLE PROJECT CONSULTANT

The client undoubtedly bears a heavy responsibility for the series of choices that need to be made throughout the process. Even if the client has successfully conducted the programming stages, it cannot, however, expect the project to go smoothly unless it chooses a good architectural consulting team and provides it with the necessary resources. The same holds true, moreover, for the choice of all the other participants, including of course the building firms.

Making the right choice requires a measure of architectural knowledge, which can be acquired. The MIQCP therefore recommends that public clients, before initiating a project, should visit other buildings, listen to explanations of the design and production processes and how architects work, in order to form a personal opinion of what they can actually expect from their future project consultants. It seems essential that the procedure for selecting candidates be conducted in a very open, transparent manner.

Similarly, choosing the best project in an architecture and engineering competition requires the ability to evaluate the various project proposals. To guide its decision-making, the public client should thus be assisted by qualified people, especially architects, in the technical committee and competition jury.

REGULATORY COMPLEXITY

Legislation and its implementing regulations are necessary, but when they become too rigid and complex, or even mutually incompatible, they eventually engender inhibitions in the building authority and supervisory department that are detrimental to the main goals sought.

Today, clients and project consultants alike are lost in the regulatory wilderness: public procurement code, civil code, construction code, town planning code, labour code, safety regulations, etc. Similarly, strict interpretation of laws and regulations can lead to a result that is contrary to the quality objectives which was why those laws and regulations were adopted in the first place.

In its activity as an advisor, the MIQCP sees evidence every day that public clients are no longer concerned with "how can I do this well?" but with "what am I allowed to do?" Their fear of breaking the rules monopolises their energy and stifles their imagination and thought processes. The spirit of the law is neglected in favour of the letter.

In practice, public clients would be well advised, before any administrative action is taken – e.g. the first hearing – to lay down comprehensive legal guidelines and to conduct an end-to-end simulation of the administrative process, which should remain subordinate to the desired operation.

Whereas the client needs to be on its guard, the project consultant for its part should deploy combativeness and ingenuity to find a solution or solutions that can comply with the rules without distorting the project. This requires that the consultant work in close collaboration with the supervisory bodies.

COMMISSIONING PROCESSES THAT PROMOTE QUALITY IN PUBLIC CONSTRUCTION

3

The first chapter of this volume examined the values that architecture or urban development should embody. The end of the chapter highlighted the difficulty of applying objective standards to the architectural debate: the quality of public buildings – and particularly their social and cultural value – is not easily measured, because this requires moral, political or aesthetic judgement, with all the concomitant risks of arbitrariness.

In view of the myriad inputs of architecture and the heated debates surrounding them, the MIQCP has never issued a quality certification. Such an exercise would have been as presumptuous as seeking to calculate the volume of a cloud.

The final quality of a building stems from the sum of the knowledge, sensibilities and professional abilities of the long chain of participants, from the client's first impulse to build through to "acceptance" of the completed building – and beyond.

It quickly became apparent to our predecessors that improvements in the methods, behaviour and interface management – in short, of the very process – of architectural commissioning is in itself a significant factor of quality.

The MIQCP's doctrine was founded on identification of the true levers of quality: the upstream stages of the process, with the focus on the public client. This volume would therefore be incomplete if it did not, in this chapter, summarise the principles which give public clients the best chance of obtaining a good result.

ACTORS

■ The public client

Title I of the MOP Act states that the public client is the foremost guarantor of a work's quality: *"It bears the primary responsibility for the work, and in this role it performs a duty in the general interest which it may not lay aside."* It may, however, seek assistance in fulfilling its role.

The client is thus responsible for the overall organisation of the operation. *"It is up to the client, after verifying that the operation under consideration is both feasible and advisable, to decide on the site, to establish the programme, to determine the estimated maximum allowable cost, to procure the necessary financing, to choose the process governing construction of the work, and to sign design and construction contracts with the project managers and building firms which it selects."*

Although the public client is always a legal entity, it is represented by a designated manager who acts on its behalf and helps to translate the character, commitment and activity of the client into the basis for architectural quality. This manager is empowered to make independent decisions, and as such must be aware of the scope of his or her responsibilities; must be able to assemble all the human, financial and organisational resources required for the operation to succeed; and must be open to the culture of architecture and urban planning. The quest for quality requires personal involvement and constant availability for a project that will affect the community and living conditions for many years (far longer than the duration of an electoral term).

The client is thus the keystone of the construction project and of its quality, bearing the sole

**"Act no. 85-703 of 12 July 1985 relating to public clients and their relations with private project consultants", known as the MOP Act.*

political responsibility for them. The great variety of issues involved requires that the political motivation driving the project be backed up by technical expertise and suitable resources. It requires the participation of many skilled players from many different backgrounds. Moreover, the law affords the public client the option of outsourcing some of its functions. This is the case for:

- the **agent,** to whom the client may entrust *"within the limits of the programme and the maximum allowable cost it has set, … the exercise, in its name and on its behalf, of all or part of the functions prescribed by law".*

  This mission may be given only to service providers designated by law.

- the **operations manager**, to whom the client may entrust a mission of general administrative, financial and technical assistance. As for agents, this mission may be given only to professionals authorised by law. In addition, *"the mission of operations manager precludes the service provider from accepting any project consultancy assignment relating to the same construction work, and it is covered by a contract".*

- **assistants to the client,** who may be given expert inspection and consulting missions for the purpose of providing the client with decision support in all the fields of expertise required for the project. These missions apply only to specific studies or actions and may not involve general assistance of the operations management type. In particular, they relate to *"the studies required for estimation of the maximum allowable cost as well as drawing up the programme, [which] may be entrusted to a public entity or natural person".*

  It should be emphasised that the missions of the agent, the assistant to the client and the operations manager all involve assistance to the client, and they should not include any aspect, even partial, of the project consultant's mission.

■ The project consultant

Title II of the MOP Act does not define the project consultant's function in itself, as for the client, but through the content of its missions. The law also recommends that the missions of the project consultant and those of the building firm be kept separate.

"The project consultant's mission, which the client may entrust to a natural person under private law or a grouping of persons under private law, should be to provide an architectural, technical and economic response to the programme…
In a public construction project, the project consultant's mission is distinct from that of the building firm."

The project consultant's mission requires several types of skills: architectural, technical, economic, social, town planning, etc.

It covers questions relating to integration into the landscape, to the environment and to the use of the buildings. It is the business of the client to decide, in accordance with the specific features of the project, which disciplines and skills need to be represented on the project consultant team; and it is then up to the architect to form a team of specialists who complement the architect's own skills and with whom he or she can work effectively.

In the building sector, the law for the first time defines a "basic" mission which assures both the client and the project consultant of continuity, from the design stage through to the completion of construction – and this continuity works in favour of quality.

When the contract negotiations are completed, the project consultancy contract is binding on both client and consultant, lays down the obligations of each party, describes the content of the project consultant's mission and specifies the remuneration for these services. In addition to this contractual relationship, however, an atmosphere of trust and mutual respect should be developed, and each party should understand one another's goals.

■ The quality of client/consultant relations

A project cannot be good unless relations between the commissioning client and the project consultant are good. The quality of the finished work will depend on that of the dialogue these actors are able to establish. They must recognise and respect each other's separate areas of responsibility, with each playing its own role to the full but not attempting to play both.

They must listen to each other in order to find a common vocabulary, to co-create and accept responsibility for a jointly achieved project.

STAGES OF THE PROJECT

The task of project supervision forces the client to orchestrate a series of highly varied tasks and to equip itself with the organisation and the resources needed for success.

■ Forming the commissioning team

Outside service providers may be hired to help in the areas where the client itself lacks skill. It is in the client's interest, however, to structure its team around two fundamental functions: political and operational.

- **The political dimension** is handled by the "project head", who is personally responsible for "carrying" the project over time. Throughout the process, it is the project head who will make the decisions required to move the operation forward, by virtue of the powers delegated by the client, which is a legal entity. In the case of a local, regional or national authority, the role of the project head necessarily falls to an elected official.

- **The operational dimension** is the responsibility of the "operations manager", whose team provides the project head with administrative, financial and technical assistance. The operations manager may in turn seek outside assistance or necessary skills. In this case, he or she is responsible for coordinating and guiding these participants.

The project head and operations manager jointly make the decisions and guide the project. The success of the project depends on the quality and longevity of their relationship.

■ Definition of objectives by the client

Before initiating any procedures, the client should consider its fundamental objectives, in order to verify that the operation under consideration is both feasible and advisable. This is the purpose of both the pre-operational studies, which are summarised in a "pre-programme", and – after validation of the pre-programme – of the operational studies, which make it possible to finalise the "programme" of the construction or development project.

Pre-operational studies and the pre-programme

The construction of a public building commits the community for the future. Not only should the project be conceived, from the very beginning, in response to identified needs, but it is also necessary to provide for the probable development of the community and changes in the building's function.

The purpose of pre-operational studies is to move forward from the initial demand, which is expressed in terms of political motivation (the political project, a service provided to the community), to the decision as to the advisability and feasibility of the construction project.

During this stage, which is internal to the client institution, the authorities examine, with outside help if necessary, all the issues arising from the explicit political demand that initiated the project. Pre-operational studies should therefore:

- **analyse the demand:** they should clarify it, provide information about it and determine the scope of the studies to be conducted. This amounts to asking "Who wants what, for whom and why?" In practice, what is often required is to turn an idea for a building into the core of a "political project" or, conversely, to clarify a somewhat vague political project by placing it in the centre of a "construction project";

- **conduct all the needed studies,** considering the project from every angle, investigating, anticipating, assessing and comparing: for the client, this is the time to determine whether the operation is advisable and feasible, and to make the right decisions on the basis of detailed information concerning expectations, objectives, constraints and the investment and operating resources allocated to the project;

- **refocus the project** on the basis of this information, clarifying its aims, suggesting choices and verifying the conditions of project feasibility: at this stage, the client may still decide either to postpone or abandon the project, to seek answers which do not involve construction or to further refine the project;

- **define the project and establish its main lines,** objectives and constraints in the pre-programme. This document sets forth the objectives of the client in the context of a political, social, economic and town-planning project. It sketches the main lines of the operation in terms of specific commitments, namely the funding appropriations and preliminary schedule which the authority will need to adhere to in order to bring its project to completion. In particular, it provides the first financial assessment of the projected operation.

In some cases, the pre-operational studies may lead the client to abandon the initial construction project in favour of another solution which it considers a more effective means of attaining the desired objectives.

- At the end of this analytical stage, **the conclusions of these studies must be confirmed by the commissioning authority:** confirmation of the pre-programme marks the public client's commitment to the operation and triggers the operational stage in which the details of the programme will be worked out.

At this stage, given the fairly detailed evaluation performed for the pre-programme, the client may already know what type of procedure will be used to select the project consultant.

The special case of restoration

The client may sometimes decide to reuse an existing building, a choice which makes it necessary to accommodate the programme to the architecture of that building.

Some functions are easily adapted to an older building. Reuse can give new life to a building whose significance in local history or in the memories of its inhabitants, whose location or whose value as part of our heritage make it worth preserving, perhaps no longer serving its original purpose, but with most of its architecture intact.

The decision to convert a building may be the result of a determination to preserve it, or may simply be one of several solutions in response to a given programme. In each case, a new, unique solution will need to be devised to manage this intersection between architecture and the use to which a building is put. This is true architectural work in which the specialist has a vital role to play. Just as for the design of a new building, there is a genuine architectural and creative task in which the constraints inherent in the existing building generate a specific problem for the architect to solve. The relationship between form and function should give rise to new syntheses engendered by an inventive mind which capitalises on the building's architectural potential, either

by extending it or by deliberately opposing it: the renovation work must be consistent with the original architecture of the building, and the converted building must be functionally consistent with its new purpose. This is a task requiring judgement and creativity, and it cannot be codified: re-using a building is rarely systematic.

Converting a building to a new use generally involves partial demolition, interior or exterior remodelling, or extensions. Before deciding to reuse a building, however, it is essential to conduct a number of preliminary feasibility studies. These should include:

- a study of the symbolic value of the building, its place in the social and cultural history of the city, and the extent to which the inhabitants are attached to it;
- an urban planning analysis of its location and its role in the present and future structure of the town;
- an architectural analysis of the building's suitability for restoration, extension or transformation, which defines the new relationships between its former and new significance;
- a technical study of the building's state of preservation (weather resistance, roof, structural elements, openings) as well as a study relating to safety and whether the building could meet currently applicable standards;
- an economic study of the work to be undertaken, using several scenarios and if possible making estimates of future maintenance and management costs.

This series of studies should provide more than a mere technical inventory of the site: it should enable the client to make an overall diagnosis of the building's suitability for reuse and to reach a decision on whether to reuse it.

The special case of public spaces and urban development

Even more than in the construction sector, preliminary studies constitute a truly indispensable stage in the process of conversion or development of public spaces. This requirement stems from the very characteristics of the "public space", whose functions cannot always be clearly identified and affirmed.

- The public space, which by its nature is appropriated collectively, is characterised by multiple use values, some institutionalised and formal, others resulting from spontaneous or informal behaviour which can give rise to management problems, conflicts among those sharing the same space, or even abusive uses of the space. Public spaces are the mirror of society and the legitimate arena of public expression in all its forms. The urban development issues associated with them – such as mobility, safety, landscape, anticipation of economic and social change, management and preservation of the identity of public areas – highlight the elected official's responsibility for seeking optimal solutions.

- Public spaces are also defined by the quality of the relationships formed there. The public's perception of a space depends strongly on

whether the relations among its occupants are peaceful or conflictual. For the people who inhabit or frequent such areas, they have their own landmarks, codes and symbolism.

- Lastly, public spaces form the skeleton of the city. Each "piece" studied is only one link in a chain, one part of a whole. Even more than for a building, the relationship between "inside" and "outside" is an important point in determining the role of the area to be developed. And this, in turn, raises the delicate question of how to define the limits of such a space.

The preliminary studies will thus be the crucial stage during which the objectives set for a given space confront the strategic urban planning and social objectives adopted for the city as a whole. They will serve as decision support tools, and will combine two closely related activities – preparation of the diagnosis and the statement of issues – with active consultations among all the players.

The diagnosis inventories all the components of the space and the project, noting the advantages and handicaps, what is malfunctioning and what has potential. It collates and analyses information concerning the given situation – human, historical, social and technical factors, the way the town functions, architectural, landscaping and environmental "givens", regulatory constraints – and the general direction of change. The functional and experiential analysis of the site identifies possible conflicts and establishes priorities. By situating the project under consideration within a coherent urban framework, users can evaluate both its local aspects and its relationship with its environment.

Each element of the diagnosis is to be tested within the context of **consultations** carried out throughout the study phase. These consultations will serve to identify all actors and users and to lay down procedures for mobilising them. They will develop a common vocabulary and referential system as a bridge across cultural gaps and differing perceptions and will specify the organisation of the client structure (internal units and associated outside experts) and the procedures according to which it will make choices and validate decisions at each stage of the process.

These consultations can also be an opportunity to solicit, in a very open-minded spirit, proposals for any further purposes that could be served by the site in question, in addition to those initially planned and those based simply on the historical uses of the space. Adoption of such proposals would, of course, be subject to their suitability when seen in the broader context of the urban planning policy adopted.

Drafting the operational programme

When a project is finally approved, after all the "measurements" and deliberations conducted in-house by the public client, it is still necessary to draw up a precise commission for the project consultant and subsequently to monitor the progress of this commission.

Operational programming, based on a document called the "programme", serves as the link between the client's political project and the architectural project. The programme is a statement of the public commission, expressing the client's qualitative and quantitative objectives in terms of needs, requirements and constraints. It is the vital document that will guide the architectural, technical and economic response of the project consultant's team. It provides a frame of reference, serving first for the competitive procedure used to select the project consultant, and subsequently as a tool for communication between client and project consultant. The programme should offer, especially in technical matters, only the level of detail that is strictly necessary for the level of design specified in the request for proposals. It becomes part of the commission contract because it specifies the expected performance and quality levels.

The programme should spell out the true objectives of the client, at the symbolic level (the client's conception of the institution and the image it wishes to convey via the future building), at the functional level (working arrangements in offices, links between units, functional and technical constraints related to the institution's activity, reception of the public, etc.) and at the level of how the project fits into the surrounding urban fabric or natural environment.

Thus a "good" programme is not merely a catalogue of surface areas, since the project consultant needs to consider all aspects of the stated requirements in order to suggest spatial solutions in the spirit of the demand formulated by the client.

Regardless of the complexity of the project, it will be easier to draw up the programme if the consultations and pre-operational studies have been well conducted. These two crucial steps are often taken too quickly, or even ignored by some public clients, which commission works without considering whether they provide a relevant solution to the initial problem. Skipping these steps to save money and time can pose a serious threat to quality.

Here again, we should point out that it is the client's duty to have these studies carried out by a genuine professional, as their impact on the end quality of the building has been fully demonstrated. The MIQCP explicitly recommends the use of a programme developer from outside the client structure, as it is useful to have someone neutral, who is able to lead the consultations and to ask all the important questions concerning the political project – including those which the client does not dare or does not wish to raise.

(See the guide "Programming for public buildings", Editions du Moniteur, 1994.)

■ Choosing a designer

Once the programme has been approved, the process of selecting the project consultant can begin. For public clients, this stage must conform to a strictly codified procedure: the process is first and foremost one of awarding public

(See "Organising a call for bids, a competition and other procedures for selecting a project consultant", Editions du Moniteur, 1997.)

contracts, and as such must be conducted rigorously and transparently. Moreover, in addition to the constraints imposed by the public procurement code and professional ethics, the operations manager must have special expertise in many areas if this process is to lead to a rational choice of designer.

The choice of which selection procedure to use is generally determined by the different fee scales laid down by law. However, the client may decide, for reasons specific to the project in question, to use a given procedure even though it is not bound to do so (such as choosing to hold an architecture and engineering competition when this is not mandatory). Here again, choosing the right consultant selection procedure offers an additional chance of obtaining the desired end quality.

There are two fundamentally different selection procedures: streamlined procedures in which the client appoints a designer, and the architectural and engineering competition, where it chooses a project.

In the first case, the client chooses the project consultant directly, on the basis of the different candidates' potential – as revealed by the portfolios submitted, hearings or preliminary visits – for carrying the proposed operation through to a satisfactory conclusion. In the competition procedure, however, the client chooses instead one of several projects developed in response to the programme.

In all cases, it should be remembered that client and designer will bear joint responsibility for the end quality of the building and that the client should therefore exert itself to find not merely a service provider but a genuine partner with whom a relationship of trust and mutual respect can be established.

We should stress the leading role played by the competition jury, whose task it is to provide the client – which makes the final decision – with the advice needed to choose the most suitable project consultant or the best project. The jury's deliberations should cover all the questions raised relating to all the files and projects submitted.

The client, which appoints the jury, should endeavour first and foremost to recruit people who, for different reasons, are likely to enrich and develop the panel's deliberations.

Regardless of the type of procedure, programming and the choice of designer are crucial stages for the future of the project. The client should therefore seek to ensure that they are conducted under optimal conditions by allowing sufficient time and making judicious use of human resources.

■ The project consultant's contract and the quality of the contract negotiations

Project consultants' contracts are negotiated. The MIQCP considers that negotiations should be

frank, addressing all the parameters of the future assignment.

The designer makes the first proposal, and to do so designers must have access to all the elements needed to back it up: the programme, objectives and constraints of the client, which will be included in the draft specific administrative clause register. A balanced negotiating process involves giving project consultants the chance to present their arguments.

The discussion all too often is confined to financial matters, and at times is limited to agreement on commercial "rebates" – which makes no sense whatsoever where intellectual services are concerned – without really mentioning the respective roles of each party and the content of the contract. This is also true for the programming studies.

At times, public clients make "take it or leave it" proposals. These clients must learn to understand the spirit of the applicable legal and regulatory texts, which have the notable virtue of providing for negotiation of the content of the future consulting assignment between the two parties, with the interest of each clearly understood.

Public clients must also become aware that the value of the service provided will in the end align itself with the value specified by the contract. Reduction of the negotiation to mere haggling is demeaning for both parties; it shows little consideration for creative intellectual services and denies the obvious fact that creativity in this context is achieved jointly, by two partners that respect each other. A dialogue that gets off on the wrong foot places the project itself at risk, and this is why the MIQCP places such stress on the quality of these contract negotiations.

Client and consultant must not confine their discussion to percentages of the construction costs, as is still all too often the case; rather, they must consider the actual content of the future assignment.

Accurate estimation of design costs and transparent negotiations are essential ingredients of better quality, in that they help to instil confidence while giving public clients a "desire for architecture".

Procedures alone cannot guarantee quality in construction. If the projected building is to become a fully-fledged architectural work, the client must select the ideal designer for the operation at hand, not the best designer in absolute terms – a designer able to seize the essence of the proposed programme and to imbue the project with the values which the building is supposed to represent: the cultural, social, urban planning, aesthetic, technical, economic, regulatory, environmental and use values prescribed by the public client.

CONCLUSION

Any public building, regardless of the material use to which it is put, results from a social demand and thus has a humanistic purpose which should be apparent in its architecture. In its reality, it communicates with human beings. Created by them, it has in its turn an impact on human behaviour and human destiny: human being creates the frame, and the frame creates human being.

Public architecture, which is social in its nature, is inevitably exposed to the gaze of all those in its environment, and it forms the constant horizon of its users. And although it is formed through a patient creative process, both simple and complex, calling for a great deal of formal reasoning, it is primarily meant to be explored through the senses and the emotions that it conveys.

It is for this reason that the starting point for this guide is also an attempt to foster a dialogue between text and image. The main purpose of the illustrations is to help explain the points made in the text. In addition, the diversity of the examples shown testifies to the abundant range of possible responses to initial requirements.

It is our hope that the reader will absorb these pages in the spirit of openness and tolerance that presided over their composition.

"It is not because things are difficult that we dare not, it is because we dare not that they are difficult."

Seneca

interministerial mission for quality in public construction

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