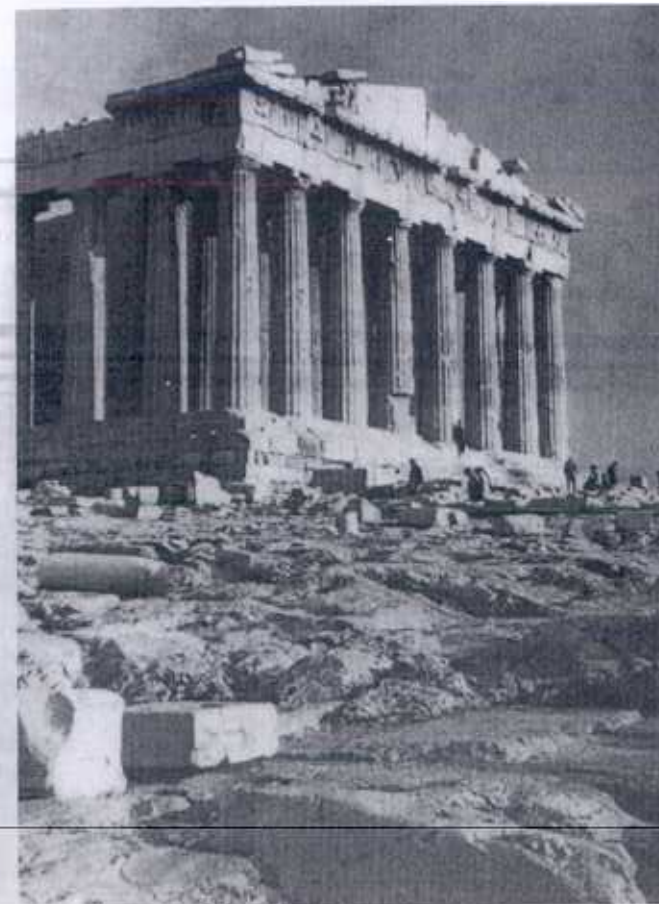


Areas of concern

## Athens: The Parthenon

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In September 1983 the Acropolis Committee invited selected international experts to Athens to discuss with their Greek colleagues the proposed conservation work on the Parthenon. The principles that were put forward are of such extreme importance that they are reproduced below, with acknowledgements to the Acropolis Committee and their author Charalambos Bouras.

#### Principles that will be observed during the operation on the Parthenon

A number of principles will be observed during the proposed work on the Parthenon, in conformity with internationally accepted requirements in the restoration of ancient monuments. The criticism that will undoubtedly be forthcoming (whether justified or not, and whether at the study stage or later) will be blunted if the proposals are objective and are set within a framework of generally agreed principles. The foresight exercised in this area in the preliminary study for the restoration of the Erechtheion seven years ago<sup>1</sup> had very positive results. It greatly assisted the participants in the international conference of December 1977 to understand the list of proposals put forward, and was favourably commented upon in their final conclusions.<sup>2</sup>

Today, of course, the restoration of architectural monuments has advanced beyond the era of dogma: the principles form a fairly broad framework, within which the proposals made should respect the particular features of each individual case. The drafters of the Charter of Venice in 1964 provided that '... each country [should be] responsible for applying [the principles] within the framework of its own culture and traditions.' This element of relativity in the observation of the principles is especially great in the case of the Parthenon because:

- (a) it is a monument of exceptional importance from every point of view;
- (b) the work on it is not now beginning: even in the theoretical sphere there exists a precedent that cannot be ignored;
- (c) our knowledge and interpretation of the Parthenon are unusually well advanced, and any consideration of the problems of the monument is correspondingly more complex.

Accordingly, in addition to the internationally agreed principles laid down in the Charter of Venice (which are discussed first below) a further five will be enunciated here, which have general application to most of the non-living classical buildings in Greece. These new principles derive indirectly from an interpretation of the precedents, and from the particular experience gained (both good and bad) in Greece, as a result of many years of practical efforts to restore ancient monuments, especially those falling within this category.

<sup>1</sup> *Study for the Restoration of the Erechtheion* (in Greek), Athens, 1977, pp. 3-5.

<sup>2</sup> International meeting on the Restoration of the Erechtheion, Athens, 1977, p. 41 (Conclusions of the group of archaeologists, architects and structural engineers).

#### I. The principles of the Charter of Venice as related to proposals for the restoration of the Parthenon

Article 2: The conservation and restoration of monuments must have recourse to all the sciences and techniques which can contribute to the study and safeguarding of the architectural heritage.

In the case of the Parthenon, as with the Erechtheion, the requirements of this article are met by the wide range of specialized skills represented amongst those responsible for the preliminary study and also amongst those who will be evaluating that study.

Article 3: The intention of conserving and restoring monuments is to safeguard them no less as works of art than as historical evidence.

The proposals discussed above for improving the value of the Parthenon, both as a scientific-historical document and as a building of great artistic value, obviously cover the requirements of the article.

Article 5: The conservation of monuments is always facilitated by making use of them for some socially useful purpose. Such use is therefore desirable but it must not change the lay-out or decoration of the building. It is within these limits only that modifications demanded by a change of function should be envisaged and may be permitted.

Clearly the new uses referred to in this Article are not those envisaged in the broader sense of the term defined above. However, the proposals do not include any changes in the lay-out or the decoration of the temple, for obvious reasons.

Article 6: The conservation of a monument implies preserving a setting which is not out of scale. Wherever the traditional setting exists, it must be kept. No new construction, demolition or modification which would alter the relations of mass and colour must be allowed.

The question of the setting of the monuments has been much studied in recent years.<sup>3</sup> In the case of the Parthenon there is no question of changing the general environment, but only the immediately surrounding space; for the last two centuries this has been filled with the dispersed architectural material that it is now intended to organise and classify or to set in position on the building. The quantity of this material in proportion to that still *in situ* is minute, and in no case will the relations of mass and colour be altered.

Article 8: Items of sculpture, painting or decoration which form an integral part of a monument may only be removed from it if this is the sole means of ensuring their preservation.

This principle is of decisive importance for the Parthenon, since its sculptural decoration is unique, not only for its quality but also for its importance as an integral part of the architectural form of the monument. Although the sculptures by Pheidias and his workshop have been

<sup>3</sup> See also Cesare Brandi, *Principi per il Restauro dei monumenti. Teoria del restauro*, Rome, 1965, pp. 105-106.



admired to the point of excess over the last 200 years, they have been treated in a way that can hardly be described as meeting with general acceptance. The majority of them were removed from the temple during an age of innocence, when the problem of the conservation of monuments had not yet been appreciated. And even today the possibility is discussed of removing the few sculptures that have remained *in situ*, in the light of the emergence of a serious new danger—the pollution of the atmosphere.

Whether or not the principle enshrined in the article is being observed, depends basically on an assessment as to how far the removal of the sculptures is 'the sole means of ensuring their preservation'. And this assessment is related to a changing situation and to actions that may or may not be implemented. Moreover, any course of action that proved to be misguided would not be especially damaging to the sculptures. Over the last five years, after it was judged that the only way to preserve them was to transfer them to the museum, the last sculptures have already been removed from the west pediment.<sup>4</sup> This course of action is readily reversible. The problem is more acute in the case of the metopes and the west frieze: it would be very difficult both to remove these and to restore them to their original position at some future date.

All these issues will be discussed with the proposals put forward.

Article 9: The process of restoration is a highly specialised operation. Its aim is to preserve and reveal the aesthetic and historic value of the monument and is based on respect for original material and authentic documents. It must stop at the point where conjecture begins, and in this case moreover any extra work which is indispensable must be distinct from the architectural composition and must bear a contemporary stamp. The restoration in any case must be preceded and followed by an archaeological and historical study of the monument.

The requirements of this article have already been emphasized in the discussion of the improvement of the values of the monument. Respect for the original form of the temple is supported by the knowledge resulting from long research in the past and from recent investigation. In fact, a thorough archaeological study has already taken place and each restoration proposed will accord with its findings. Respect for the authentic features—the architectural members of the temple—is of paramount importance<sup>5</sup> in the case of the Parthenon, and is guaranteed by avoiding as far as possible any new work on them. For the Parthenon, as for the Erechtheion, the ancient cuttings will be used for the necessary modern cramps; wherever any broken piece has to be completed, use will be made of a device for transferring points,<sup>6</sup> so that its break surfaces will remain intact.

The requirement in the Charter that restoration should bear a contemporary stamp clearly refers to work that goes beyond the bounds of certain restoration—that is, to work based on inference and comparative data. No such work is proposed for the Parthenon.

<sup>4</sup> The statues of Kekrops with one of his daughters and of Calleroe (or Procris). See the Communications of the Working Group of the Second International Symposium on the Deterioration of Building Stones, Athens, 1976, p. 71 ff. (Th. Skoulikidis, D. Charalambous and P. Papakonstantinou, 'Attaque atmosphérique et mesures à prendre').

<sup>5</sup> In order to preserve the aesthetic individuality of each member as well as its value as a scientific document.

<sup>6</sup> Instruments of this kind, using four slender pointed legs (three of them fixed and the fourth movable) are well known to sculptors. They are employed for transferring points and copying from clay or plaster models in marble or stone. (Fr. *points de pratique*, It. *puntaggiamento*).

Article 10: Where traditional techniques prove inadequate, the consolidation of a monument can be achieved by the use of any modern technique for conservation and construction, the efficacy of which has been shown by scientific data and proved by experience.

It has been demonstrated that the traditional technique of using architectural members cut from single blocks and perfectly dressed guarantees, under natural environmental conditions, a very long life to works of Greek classical architecture.<sup>7</sup> The various cements used by Balanos as substitutes for marble (mainly in order to differentiate clearly between the new and the ancient parts) deteriorated in less than half a century. Artificial stone and mortars should accordingly be ruled out, not only because they are in fact cheap materials in themselves, but because they are much less enduring than marble.

In accordance with the principles of Article 10 we preclude, as in the case of the Erechtheion, the use of a number of modern materials, such as plastics, polymers and epoxide resins, precisely because they have not been tested over a long enough period to guarantee their efficacy. By contrast, titanium will be used for all the connecting elements, since data derived from experiments in artificial aging have demonstrated that the metal is highly resistant to corrosion and effectively has an infinite life.

Article 11: The valid contributions of all periods to the building of a monument must be respected, since unity of style is not the aim of a restoration. When a building includes the superimposed work of different periods, the revealing of the

<sup>7</sup> We must admit that the international experience of restorers, concerning buildings of this type, is very limited. For a list of the 'new' techniques up to the decennium of 1970, see Carlo Ceschi, *Teoria e Storia del Restauro*, Rome, 1970, p. 127–131.





underlying state can only be justified in exceptional circumstances and when what is removed is of little interest and the material which is brought to light is of great historical, archaeological and aesthetic value and its state of preservation good enough to justify the action. Evaluation of the importance of the elements involved and the decision as to what may be destroyed cannot rest solely on the individual in charge of the work.

The requirements of this article are of limited significance for the Parthenon, since earlier, radical works (the demolition of the early Christian apse and the mosque) have already created a specific state. The views of earlier archaeologists,<sup>8</sup> moreover, usually leaned towards 'purism' and a desire to reveal the original parts of the temple.

In the new proposals, the requirements of Article 11 are observed in that the Christian staircase in the south-west corner of cella, and the Roman phases of the large west *thyroma* are to be preserved. The dispersed pieces of the later Pergamene colonnades of the interior of the temple are to be reassembled and displayed in a new exhibition. Only the pieces added by Balanos (column drums of hard stone of Piraeus and concrete, metal components, and so on) are to be removed, since they clearly fall within the category of items 'of little interest' and not 'of value' alluded to in the Charter.

Article 12: Replacements of missing parts must integrate harmoniously with the whole, but at the same time must be distinguishable from the original so that restoration does not falsify the artistic or historic evidence.

The harmonious integration of both the ancient marble pieces and the modern replacements that will inevitably have to be set in position on the Parthenon is guaranteed by their formal and structural fidelity to the original form. In this context, the proportion of new to original material, both in the monument as a whole and in individual sections of it, is a factor of decisive importance. In the proposals set out below, the proportion of new material overall is negligible, and in the individual sections of the monuments it is invariably low (it is perhaps highest in the projected completion of the roofing of the west section of the *peristasis*); no part of the temple will give the impression that it has been rebuilt. In any event, no limits are set by the Charter of Venice to the proportion of new material that can be added.

The need to distinguish between original and replacement parts laid down by Article 12, poses a particular problem for the Parthenon. A deliberate distinction in terms of form or colour would disturb the superb harmony of the temple. The fact that the new parts, and the additional restoration work, will show no signs of deterioration will differentiate them clearly enough and cover the requirements of the Charter adequately in the short term. So, too, will the appreciable difference in the texture of the new surfaces. In the long term, however, when these parts begin to deteriorate or acquire a patina, the problem of 'falsifying the evidence' will genuinely arise.

<sup>8</sup> These aspects were reviewed by Gianni Miliadis, in the Greek Archaeological Council, in the memorable session of 8 December 1953.

The solution adopted by Balanos, and now being applied to the Erechtheion, which was to carve informative inscriptions on non-visible surfaces of the new parts is perhaps the most suitable for the Parthenon.<sup>9</sup> It will be an effective device for the specialists of the future, at least, (as will the publication of the details of the operation) and will avert the fear that the temple will be 'falsified'.

Article 15: . . . Ruins must be maintained and measures necessary for the permanent conservation and protection of architectural features and of objects discovered must be taken. Furthermore, every means must be taken to facilitate the understanding of the monument and to reveal it without ever distorting its meaning.

All reconstruction work should however be ruled out *a priori*. Only anastylosis, that is to say, the reassembling of existing but dismembered parts can be permitted. The material used for integration should always be recognisable and its use should be the least that will ensure the conservation of a monument and the reinstatement of its form.

The Parthenon constitutes a typical case of *anastylosis* in the international sense of the word—the reassembling and repositioning of dismembered parts. The questions of the 'legible' nature of the monument, and minimum use of additional material were discussed in connection with Article 12.

Article 16: In all works of preservation, restoration or excavation, there should always be precise documentation in the form of analytical and critical reports, illustrated with drawings and photographs.

Every stage of the work of clearing, consolidation, rearrangement and integration, as well as technical and formal features identified during the course of the work, should be included. This record should be placed in the archives of a public institution and made available to research workers. It is recommended that the report should be published.

An extensive general documentation of the Parthenon has already been published, including descriptions, drawings and photographs, and also special measurements for the analysis of specific problems, such as the question of visual refinements. This documentation<sup>10</sup> could indeed be considered adequate for those parts of the temple in which no work is planned.

The second part of chapter one of the study for the restoration of the Parthenon includes a system of codification by means of which the documentation was set on a unified basis. New drawings will be made methodically both of those parts of the temple that will be dismantled and of the dispersed architectural material. In the case of the former the drawings for each of twelve programmes will record the details in the precise spirit of the Charter, and in a manner similar to that deployed in the Erechtheion. For the dispersed material, work commenced long ago with a reexamination of all the architectural members lying on the ground, and the drawing up of an exhaustive archive, particularly of the pieces belonging to the Parthenon. This archive is totally indispensable

<sup>9</sup> F. Hueber, *Anastylosis und Ergänzung von Bauteilen, Archäologie und Denkmalpflege*, Berlin, 1976, p. 47.

<sup>10</sup> A.K. Orlandos, *The Architecture of the Parthenon* (in Greek), vol. II, Athens, 1977, p. 13–18. The three volumes of Orlandos' book include the most complete and accurate measured drawings of the monument which have been published so far.



for the detailed studies in connection with the restoration work. The hope here, as in the case of the Erechtheion, is that the documentation carried out during the course of the operation will be an exhaustive one and that eventually, detailed publications will appear that will satisfy the requirements of Article 16.

## II. Principles deriving indirectly from the Charter of Venice relating to Greek classical architecture

Article 1. Reversibility: it should be ensured that it is possible to return the monument to its present state, before the operation.

The principle stems from the view that a monument is a source of scientific evidence and from the premise that mistakes may occur during the preliminary study or the execution of the work. It takes as its starting point, that is, the intention to preserve the monument as a source of evidence after the work is completed and also to ensure that any mistake is rectifiable.

This principle was applied to classical monuments some time ago<sup>11</sup> and is now being carefully observed in the restoration of the Erechtheion.<sup>12</sup> It is guaranteed by two safeguards: (a) the reduction to a minimum of interference with ancient material; and (b) exhaustive documentation before any change is made.

Both of these points are virtually covered by what has been said already. The use of an instrument for transferring points produces surfaces that fit perfectly with the break surfaces of original material and makes it unnecessary to dress the latter.<sup>13</sup> One difference from the proposals made for the Erechtheion is due to the experience gained in implementing those proposals, and has to do with the use of strong mortars in joining together fragments (or additional restored material) of the same member: in the preliminary study for the Erechtheion it was agreed that such mortars should not be used, in order to observe the principle of reversibility. Today, however, it is agreed that they can be used without hesitation.<sup>14</sup> Finally, exhaustive documentation should include a statement of the position in which the dispersed material is lying, even though in most cases this is certainly not the position in which each piece fell after it broke away from the temple.

Article 2: Preservation of the autonomy of architectural members and their static function.

The above derives from an interpretation and extrapolation of the provisions of Article 9 of the Charter of Venice particularly in connection with Greek classical monuments. The structure of the 'non-living' ancient monuments of Greece is exceptionally simple: they are trabeated buildings, in which there are no lateral thrusts or horizontal stresses, and they have carefully dressed seatings. They are characterized by a total

<sup>11</sup> Charalambos Bouras, *The Restoration of the Brauron Stoa* (in Greek), Athens, 1967, pp. 172-174.

<sup>12</sup> International meeting on the restoration of the Erechtheion, Athens, 1977, p. 29.

<sup>13</sup> See also Chapter 9 of the Charter, which imposes the 'respect for the original materials'. For the instrument see note 6.

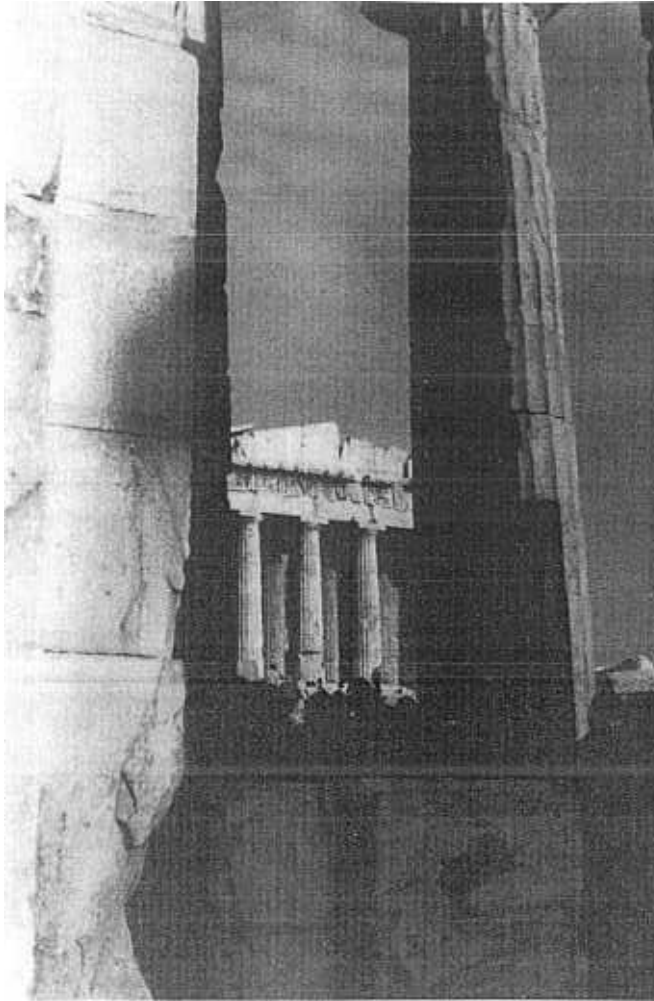
<sup>14</sup> A very strong mortar would prevent the separation of the two pieces, but this would not be fatal in case of error. Two distinct cases may be discerned: (a) The possibility of an error in the fitting of two original fragments of an architectural member is practically minimal, because of the complexity and the characteristic appearance of their fracture surfaces. Therefore, their irreversible joining should be correct. (b) Errors are more likely to occur in the case of a joint of an original fragment and a new marble complement, because the corresponding missing original may be found, and it should then take its place instead of the complement. In this case the separation is attainable because we can destroy the new piece, without damaging the original. Here too, the proposed irreversible method of joining with strong mortar, is again correct.



absence of binding agents (mortars), by the structural and formal autonomy of the individual stone members, and by the fact that they achieve static equilibrium through their own weight. Corbels, eccentric loadings, and 'dynamic states' in general, are avoided.

These properties should be respected during the operation on the Parthenon, and the autonomy of each individual architectural member





and the simple structural function of those supporting it should be preserved. This is the only proper way to interpret and extend the provisions concerning 'respect for the original state of the monument'.

Article 3: The operation should be restricted to those parts of the monument that have already been restored.

The dismantling and reassembling of parts of the temple that have remained undisturbed since antiquity is acceptable only exceptionally, at the few points where it is made necessary by the need to remove rusted ancient cramps, or where parts that have shifted as a result of earthquakes need to be restored to their original position. The need to respect the original state of the monument is paramount here too.

Article 4: The ruin should be made self-conserving.

The ancient parts themselves, when restored (with either ancient or modern additions), will make it possible to conserve the monument properly and afford the building the required degree of protection from natural conditions.

Article 5: The changes in the appearance of the monument should be kept to a minimum.

This last principle derives from the fact that the most important Greek temples have acquired the value of symbols for modern society. Most Greeks (and foreigners too) do not analyse these famous ruins, but merely appreciate them. They are not interested in the historical and artistic values expressed by the ruins, but the monuments are nevertheless important to them. In the collective historical consciousness and experience of the Greeks, the Parthenon means many things, which are perhaps obscure, but are undoubtedly of fundamental importance. For them, the great temple has acquired the sanctity of a symbol and should accordingly, like all symbols, remain forever unchanged.

During the last fifty years, the Parthenon *has* remained completely unchanged, and has been visited by more people than at any previous period. The image it now presents has become familiar throughout the entire world and has been recorded millions of times in pamphlets, books, photographs, films and the like. All this should make us very careful when planning changes.

At the same time, however, the question arises as to what is the image we are in fact talking about. The present study is not the place to go into the complex problems of perception, which become even more complicated when the question of the education of any particular visitor to the Acropolis is taken into account. What is of importance is that this principle should be observed only to the degree that the restoration work should not obstruct the intention to improve the temple. This is in fact achieved by the proposals put forward, for the changes are limited. They will certainly not render the Parthenon unrecognizable, and will only be noticed by attentive visitors and by specialists.

### Résumé

En septembre 1983, le Comité pour l'Acropole invita à Athènes un certain nombre d'experts internationaux pour étudier avec leurs collègues grecs le plan de travaux de conservation du Parthénon. Les principes qui furent énoncés alors sont d'une telle importance qu'ils figurent in extenso dans le corps de l'article.

Etant donné que les progrès faits dans le domaine de la restauration des monuments architecturaux vont maintenant bien au-delà de simples dogmes selon l'auteur, les principes formulés définissent un cadre général à l'intérieur duquel la spécificité de chaque cas devrait être respectée. Se référant à la Charte de Venise qui stipule que 'chaque pays doit appliquer les principes dans le cadre de la culture et des traditions qui lui sont propres', il note que cet élément de relativité est particulièrement important pour le Parthénon car: (a) il s'agit d'un monument d'une importance exceptionnelle à tous les points de vue; (b) les travaux de conservation n'en étant pas à leur début, les précédents, même théoriques, qui existent ne sauraient être ignorés; (c) la connaissance et la compréhension que nous avons du Parthénon étant particulièrement approfondies, les problèmes actuels sont d'autant plus complexes.

En plus des principes admis par la communauté internationale énoncés dans la Charte de Venise (qui sont discutés) ce groupe a formulé cinq autres principes applicables à tous les bâtiments classiques non habités de Grèce. Les principes de la Charte, amplifiés quand cela semble nécessaire, sont ceux énoncés aux Articles 2, 6, 8, 9, 10, 11, 12, 15 et 16 auxquels s'ajoutent les principes concernant la réversibilité des travaux, la préservation de l'autonomie des diverses parties architecturales et de leur fonction statique, la minimisation des opérations concernant des sections déjà restaurées, les efforts à faire pour que la ruine se conserve toute seule et le respect de l'apparence du monument. Chacun de ces principes est étudié par rapport au Parthénon.

### Resumen

En septiembre de 1983, el Comité de la Acrópolis invitó a Atenas a un grupo escogido de expertos internacionales para que discutieran con sus colegas griegos las obras de conservación propuestas para el Partenón.

Los principios que se adujeron resultan de tanta importancia que se reproducen aquí. El autor cree que, dado que la restauración de monumentos arquitectónicos ha superado la era del dogmatismo, los principios aducidos constituyen un amplio marco dentro del cual deben respetarse las características particulares de cada caso individual. Con referencia a la declaración de la Carta de Venecia en el sentido de que cada país debe ser responsable de la aplicación de principios de acuerdo con el marco de su propia cultura y sus propias tradiciones, indica que la cuestión de la relatividad resulta particularmente intenso en el caso del Partenón porque: (a) es un monumento de importancia excepcional desde cualquier punto de vista; y (b) las obras no empiezan ahora; incluso en el ámbito de la teoría existe un precedente que no puede ser ignorado; y (c) nuestros conocimientos e interpretación del Partenón han hecho unos progresos poco corrientes, y, por consiguiente, la consideración de los problemas del monumento es también más compleja.

Además de los principios internacionalmente reconocidos de la Carta de Venecia (que se comentan), se enuncian otros cinco que resultan de aplicabilidad general a todos los edificios clásicos no vivos de Grecia. Los principios de la Carta, que se amplían de ser necesario, son los Artículos 2, 6, 8, 9, 10, 11, 12, 15 y 16. Los principios adicionales se refieren a la reversibilidad, la conservación de la autonomía de miembros arquitectónicos su función estática, la restricción de operaciones a aquellas partes del monumento que han sido ya restauradas, el objetivo de hacer que una ruina se autoconserva, mantener un mínimo de cambios en el aspecto del monumento. Cada uno de estos principios se discute con referencia al Partenón.