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## A TOUGH INTERRELATION: ARCHITECTURAL CONSERVATION THEORY AND ELECTROMECHANICAL INSTALLATIONS ARRANGEMENT IN LATE 19TH AND EARLY 20TH CENTURY MONUMENTS

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**ABSTRACT:** In the 60 years since its foundation, ICOMOS has achieved a major contribution to the establishment of common principles for the conservation of architectural heritage. Starting with the Venice Charter, it has shaped a constantly growing theoretical framework, which, within the European setting, has placed the emphasis on preserving monuments “*in the full richness of their authenticity*”, as prescribed by the renowned document. Yet no matter how meticulously these principles are applied, a major cause of concern frequently arises: the arrangement of the all too often complex and sizable electromechanical installations that are needed in order to ensure, next to an attractive restoration, a viable and safe use of the conserved monument. The delicate issue calls for a focused discussion, which will highlight the complexity of achieving a balance and provide directions for optimum future action. This is the goal of the present paper, which initially identifies the related conservation principles, and secondly, reviews and evaluates five characteristic case studies in major late 19th and early 20th century monuments of Thessaloniki, in northern Greece. The overall endeavour culminates in the deduction of original, practical conclusions as to the prerequisites of a positive outcome, both in terms of necessary steps and appropriate actions.

**KEY WORDS:** Electromechanical installations, monuments, adaptation, compatibility, discreetness

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## Introduction

Since its foundation in 1965, ICOMOS has played a pivotal role in the formulation of common principles for built heritage conservation. With the Venice Charter as its primary point of reference, it has established a theoretical framework that is all too often challenged by a demanding endeavour: the arrangement of the electromechanical installations that are needed to ensure, next to an attractive restoration, a viable and safe use of the conserved monument. The issue calls for a focused discussion, which will highlight the complexities of balancing the theoretical and practical requirements, in addition to providing directions for optimum future action.

The present paper pursues this goal, initially by specifying the related principles of the ICOMOS guiding documents, and secondly, by reviewing and assessing their validity in five specially selected case studies, namely five episodes of electromechanical installations arrangement in late 19th and early 20th century monuments in Thessaloniki, the second largest city of Greece. In culmination, it produces a set of original, practical conclusions from past actions that can optimize future efforts. The material for this task was gathered with bibliographic and archival research, coupled with the author's unique, firsthand experience as director of the state body charged with the protection of the selected monuments.

### 1. The theoretical framework

Unlike today, in the 1960s, the arrangement of electromechanical installations in historic buildings was not an issue of particular concern. Related works in the course of conservation normally involved the maintenance or upgrading of a limited number of existing amenities, namely heating, drainage, and water, electricity and gas supply. Hence, it comes as no surprise that the theoretical foundation of ICOMOS, the renowned Venice Charter of 1964, did not provide direct guidelines on the subject. In a rather indirect manner, it specifies that, in the wider context of reuse, necessary modifications “*must not change the lay-out or decoration of the building*”<sup>1</sup>. In addition, in the course of restoration, “*any extra work which is indispensable must be distinct from the architectural composition and must bear a contemporary stamp*”<sup>2</sup>.

As the years passed and adaptation to modern living standards became increasingly important, relative guidance took a few steps forward. The more focused Charter on the Built Vernacular Heritage (1999) underlines that “while being compatible with acceptable standards of living”, adaptation or reuse “*should be carried out in a manner which will respect the integrity of the structure, its character and form*”<sup>3</sup>. Moreover, “*alterations which legitimately respond to the demands of contemporary use should be effected by the introduction of materials which maintain a consistency of expression, appearance, texture and form throughout the structure and a consistency of building materials*”<sup>4</sup>.

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<sup>1</sup> Venice Charter. *International Charter for the Conservation and Restoration of Monuments and Sites* (1964), art. 5.

<sup>2</sup> Ibidem, art. 9.

<sup>3</sup> *Charter on the Built Vernacular Heritage* (1999), art. 5.

<sup>4</sup> Ibidem, art. 4.

Similarly, the Dublin Principles (2011) stress, with respect to the industrial heritage, that “building codes [...] and other standards should be implemented in an adapted way to take heritage dimensions into account”, and that, “wherever possible, physical interventions should be reversible”<sup>5</sup>. Lastly, the equally focused ICOMOS Guidelines on Fortifications and Military Heritage (2021) call for interventions that are “aesthetically compatible with the original structure and setting”<sup>6</sup>.

## **2. Responses in practice**

The arrangement of the necessary electromechanical installations in accordance with the above guidelines is a demanding task, as characteristically illustrated in the hitherto efforts to conserve and enhance the late 19th and early 20th century monuments of Thessaloniki, the highly historic, second-largest city of Greece<sup>7</sup>. Up until the late 1970s, Thessaloniki’s sizable “modern” architectural heritage had largely escaped attention. Yet after 1978, when a major earthquake hit the city, causing significant damage, and most importantly, after 1980, the year a special Service of the Ministry of Culture and Sciences was established for the protection of the latter, systematic preservation initiatives began to unfold.

Though greatly enhanced by the engagement of specialized engineers who had completed postgraduate studies abroad, conservation works were initially minimal. The 1990s saw a notable surge, as a result of the large number of projects that were simultaneously undertaken in preparation for the inauguration of the city as Cultural Capital of Europe for the year 1997<sup>8</sup>. At the dawn of the 21st century, the overall pace slowed down, only to reach a new peak after the gradual de-escalation of the Greek debt crisis, with a still active precedence in the reuse of historic buildings as hotels and apartment units. In the overall 45-year spectrum, the following notable cases provide an ideal framework for the prescribed focused discussion.

### *Achmet Kapantzi Mansion: A case of initial concerns*

Erected between 1905 - 1907, as the residence of one of Thessaloniki’s wealthiest families, the Ahmet Kapanji Mansion (108, Vasilissis Olgas Avenue) is an astonishing work of eclectic architecture. In the 1980s, after years of neglect, it was acquired by the prestigious National Bank

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<sup>5</sup> *The Dublin Principles. Joint ICOMOS - TICCIH Principles for the Conservation of Industrial Heritage Sites, Structures, Areas and Landscapes* (2011), arts. 10 and 11, respectively.

<sup>6</sup> *ICOMOS Guidelines on Fortifications and Military Heritage* (2021), art. 5.3.c.

<sup>7</sup> For a comprehensive review of the related efforts, see: Zygomalas, D. (2007). Ena idiotypou therapeftiko encheirima: I syntirisi kai apokatastasi ton mnimeion tis Thessalonikis (A special remedial endeavour: The conservation and restoration of the monuments of Thessaloniki). In *Praktika 3is cheimerinis diimeridas tis Ellinikis Etaireias Giriatrikis Oγκολογias “Neoteris exelixeis sti giriatriki oγκologia”* (Proceedings of the 3rd winter two-day conference of the Hellenic Society for Geriatric Oncology “Latest developments in geriatric oncology”). Hellenic Society for Geriatric Oncology. 8-10.

<sup>8</sup> For the respective projects, see: Papadopoulos, L. (Ed.). (2001). *Metaschimatismoi tou astikou topiou* (Transformations of the urban landscape). Organization for the Master Plan and Protection of the Environment of Thessaloniki, 118-147, 356-399, 432-510, 528-535, 546-561, 580-589, 636-641, 676-677.

of Greece, in order to be restored and reused as its local cultural center<sup>9</sup>. The final conservation project, drafted in 1985 by a pair of specialized architects, was one of the first of its kind in the city, hence a truly pioneering effort, which set an initial point of reference for electromechanical installations arrangement in Thessaloniki's historic buildings.

The review of the project's plans and technical reports reveals that, even at this early stage, the engineers were fully conscious of the overall challenge: "reuse [...] requires the introduction of extensive electromechanical equipment", which could easily "distort [...] the architectural character" of the renowned mansion<sup>10</sup>. To avoid such an event, they specifically adopted two basic principles: minimal intervention and attention to detail<sup>11</sup>.

Minimal intervention was pursued, on one hand, on a physical level, involving, for instance, the complete replacement -without relocation- of the drainage system, along with the arrangement of the new lavatories close to the replaced pipes, so that alterations to the floors could be avoided. On the other hand, where multiple new features had to be introduced, care was taken for the minimization of aesthetic disturbance. To this end, plumbing and cabling were concealed in the new underground floor, wall plaster and suspended ceilings, while the bulky external unit of the fan coil heating - cooling system was placed at a well-hidden, underground spot on the perimeter of the building. Lastly, attention to detail was illustrated in the ingenious arrangement of the fan coil system's internal units in the recesses adorning the base of the windows, in conjunction with a discreet adaptation of the ornate wood panelling (Figs. 1, 2).

On the whole, the relevant interventions reflect an emphasis on maximum discreetness, which can be easily understood in the context of the 1980s. This was a time when Thessaloniki's early 20th-century architectural heritage was daily threatened by demolition. Hence, the enhancement and projection of the mansion's special character, without the slightest alteration, was a top priority, including a minimal impact by the arrangement of the necessary electromechanical systems. Remarkably, the selected course of action serves well the guidelines of even posterior ICOMOS documents, going even a bit beyond their requests -particularly those of the Venice Charter- for aesthetically compatible, yet also modern in design fixtures.

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<sup>9</sup> Regarding the historic development, cultural significance and restoration of the mansion, see: Lavas, G. P., & Stefanou, S. N. (1983). "Villa Kapantzi" Thessalonikis: Morfologika kai kataskevastika stoicheia tou eklektikismou ("Villa Kapantzi", Thessaloniki: Morphological and structural aspects of eclecticism). In G. Karadedos (Ed.), *Praktika tou panelliniou synedriou "Neoklassiki poli kai architektoniki"* (Proceedings of the panhellenic conference "Neoclassical city and architecture"). Aristotle University of Thessaloniki, 259-267; Trakossopoulou-Tzimou, K. (1985-86). Vas. Olgas 108. Villa Achmet Kapantzi. In E. Kambouri (Ed.), *Ta neotera mnimeia tis Thessalonikis* (The modern monuments of Thessaloniki). Hellenic Ministry of Culture - Ministry of Northern Greece, 230-233.

<sup>10</sup> Lavas, G. P., & Stefanou, S. N. (1985). *Villa "Kapantzi": Apokatastasi kai nea chrisi, Pinakothiki E.T.E.* (Villa "Kapantzi": Restoration and new use, Art gallery of the National Bank of Greece) [Technical report of restoration project]. National Bank of Greece, 7.

<sup>11</sup> *Ibidem*, 7, 21.

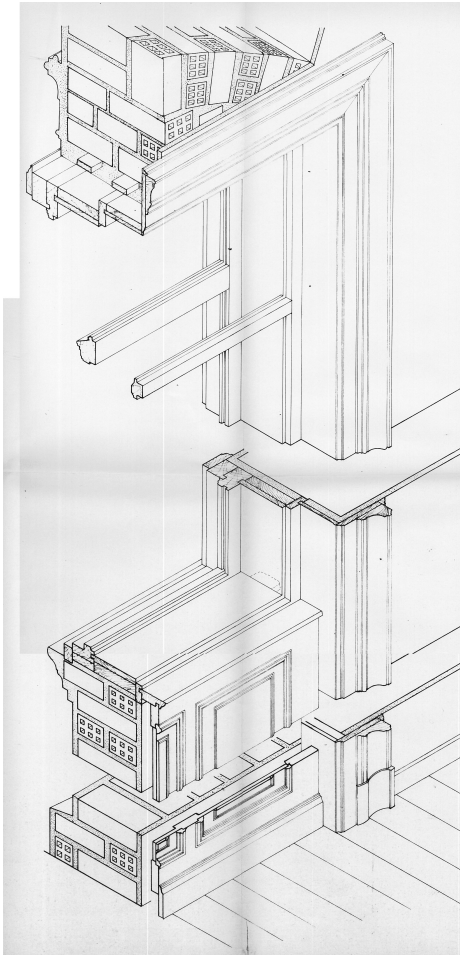


Fig. 1. Achmet Kapantzi Mansion, axonometric drawing of a typical original window, featuring a recess at the base and ornate wood panelling. Source: Archive of the Hellenic Ministry of Culture, Service of Modern Monuments and Technical Works of Central Macedonia

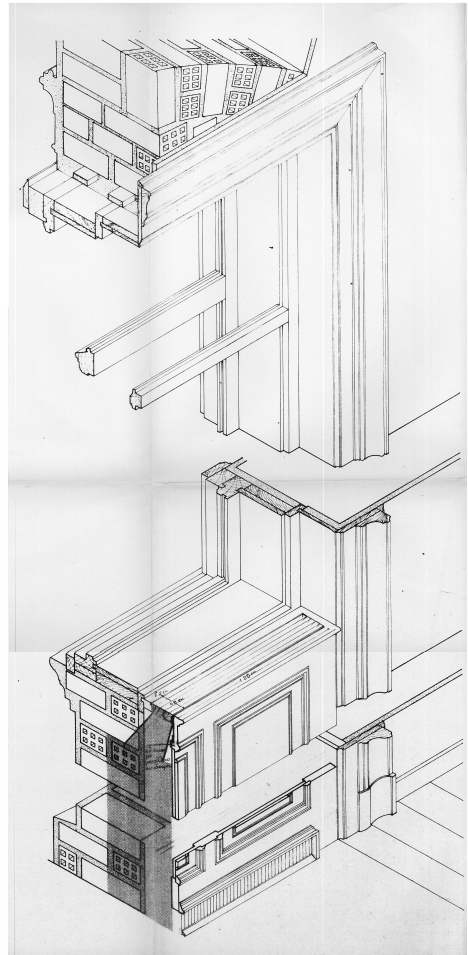


Fig. 2. Achmet Kapantzi Mansion, axonometric drawing of a typical original window, with a fan coil unit inserted in the recess and adapted wood panelling. Source: Archive of the Hellenic Ministry of Culture, Service of Modern Monuments and Technical Works of Central Macedonia

*House on 19, Epimenidou Street: Efforts in a traditional context*

Nearly a decade later, the feverish effort to highlight Thessaloniki's "modern" architectural heritage, ahead of its inauguration as Cultural Capital of Europe in 1997, encompassed the conservation of numerous less opulent houses, among them the one on 19, Epimenidou Street. A typical, sizable example of local traditional architecture, the two-storied building was erected in the first half of the 19th century, and in 1988, was acquired in a derelict state by the Municipality of Thessaloniki. In 1997, it was conserved and reused as a cultural hub, currently housing the offices of local non-governmental organizations<sup>12</sup>.

The respective project was drafted by a multidisciplinary team of engineers, headed by specialized architects. Here again, the issue is clearly set from the beginning: electromechanical installations "need to satisfy modern functional requirements in full, without disturbing the aesthetic integrity of the spaces"<sup>13</sup>. Within this context, discreetness remained a primary goal, as initially witnessed in the arrangement of the lavatories in a blind extension of the ground floor, dug into the ground rise (Fig. 3), as a positive alternative to subjecting a part of the original structure to extensive plumbing deployment. Moreover, pipes and cables were built into the walls and floors. Most importantly, on a second level, the interior spaces were equipped with small-sized, thin electric panel heaters and uniform, plain light fixtures (Fig. 4). The latter attest to yet another pursuit of aesthetic integration, unlike, though, the Ahmet Kapanji Mansion, without risking a misunderstanding of the new features as parts of the original building. This time, they are clearly differentiated as modern additions, carefully sized and shaped in order not to detract attention from the special character of the building.

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<sup>12</sup> Regarding the historic development, cultural significance and restoration of the house, see: Kambouri, E. (1985-86). Epimenidou 19. In E. Kambouri (Ed.), *Ta neotera mnimeia tis Thessalonikis* (The modern monuments of Thessaloniki). Hellenic Ministry of Culture - Ministry of Northern Greece, 126; Anagnostidis, M., Doussi, M., Chatzopoulou, O. et al. (1999). Paradosiako ktirio stin Ano Poli Thessalonikis (Traditional building in the Upper Town of Thessaloniki). In M. Nomikos (Ed.), *Katalogos tis ekthesis "Apokatastasi kai anaviosi istorikon ktirion kai poleon apo ton 18o eos ton 20o aiona sta Valkania"* (Catalogue of the exhibition "Restoration and revival of historic buildings and cities from the 18th to the 20th century in the Balkans"). Technical Chamber of Greece, 106-107; Anagnostidis, M., Doussi, M., Chatzopoulou, O. et al. (2001). Apokatastasi diatiriteou ktiriou stin Ano Poli Thessalonikis (Restoration of listed building in the Upper Town of Thessaloniki). In M. Nomikos (Ed.), *Apokatastasi - epanachrisi mnimeion kai istorikon ktirion sti voreia Ellada* (Restoration - reuse of monuments and historic buildings in northern Greece). Ergon IV, I, 172-195; Papadopoulos, L. (Ed.). (2001). *Metaschimatismoi tou astikou topiou* (Transformations of the urban landscape), 454-455.

<sup>13</sup> Anagnostidis, M., Doussi, M., Chatzopoulou, O. et al. (2001). *Apokatastasi diatiriteou ktiriou stin Ano Poli Thessalonikis* (Restoration of listed building in the Upper Town of Thessaloniki), 188.



Fig. 3. House on 19, Epimenidou Street, cross-section, displaying the arrangement of the lavatories in a blind extension of the ground floor, dug into the ground rise. Source: Anagnostidis, M., Doussi, M., Chatzopoulou, O. et al. (2001), 183 (Fig. 62)

This notable variation echoes the project's wider emphasis on the projection of the building's structural phases, along with its aesthetic merits. The emergence of the historical values next to the morphological ones, a notable development in local conservation matters in the mid-1990s, primarily as a consequence of the wider engagement of specialized engineers and the substantial contribution of the local Service of the Ministry of Culture, brings the overall effort much closer to the principles of the ICOMOS documents, in particular in terms of the aesthetic consistency and discernability of the new fixtures, yet for the time being, with a very light distinction of their modernity.



Fig. 4. House on 19, Epimenidou Street, view of the central area of the upper floor, featuring small-sized, thin electric panel heaters and uniform, plain light fixtures. Source: Anagnostidis, M., Doussi, M., Chatzopoulou, O. et al. (2001), 194 (Fig. 107)

*Port Warehouse C: The particularity of the industrial context*

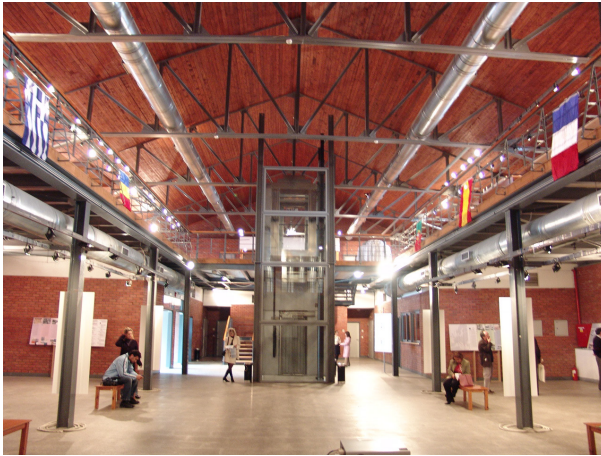
Next to the residential buildings, the conservation works ahead of the 1997 celebrations encompassed public infrastructure, with a clear priority on reuse for exhibition purposes. This was the case of Warehouse C, at the southeast end of the first pier of Thessaloniki's port. Constructed in 1904, the sizable, yet plain edifice displayed a set of distinctive characteristics, all typical of the port's initial storage facilities: a clear rectangular volume, made up of metal-framed walls with non-plastered brick infill, a gabled roof and an open plan interior. In 1997, it was conserved and converted into an exhibition hall, which currently houses the Thessaloniki International Film Festival<sup>14</sup>.

The conversion of the warehouse into an exhibition hall entailed, on one hand, a rearrangement of the interior, involving the construction of an elevated gallery on the perimeter of the building and the establishment of subsidiary spaces both below and on top of the new platform, at its narrow ends. On the other hand, it required the deployment of a complex network of electromechanical installations, considering the simultaneous accommodation, next to the central exhibition area, of lecture halls, meeting rooms, offices, computer rooms, recreational spaces and lavatories.

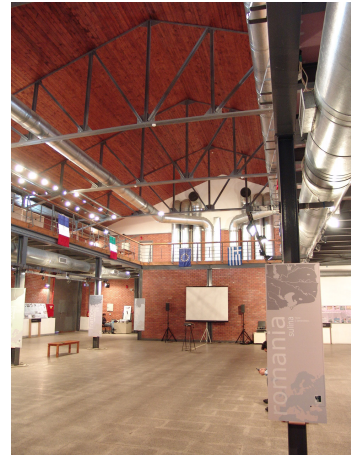
The establishment of these spaces within the building envelope from scratch allowed extensive concealment of plumbing and cabling in the added dividing walls and suspended ceilings, as well as in the wholly renewed substructure of the ground floor, in combination with the insertion of uniform visible fixtures of plain form. In the case of the voluminous exhibition area, though, the provision of clear views of the exterior brick walls and the composite roof structure, in an attempt to highlight the building's special character, produced two notable, fully visible interventions: the installation of a glass elevator on the long axis of the building, precisely at the centre of the north narrow side of the elevated gallery (Fig. 5), and the linear deployment of heating and air-conditioning ducts inside the roof structure, below the new platform and on the wall surface facing the elevator (Fig. 6).

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<sup>14</sup> Regarding the historic development, cultural significance and restoration of the warehouse, see: Papadopoulos, L. (Ed.). (2001). *Metaschimatismoi tou astikou topiou* (Transformations of the urban landscape), 134-137.



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Fig. 5. Port Warehouse C, view of the central area, with the glass elevator that was added at the centre of the north narrow side of the elevated gallery. Photo: Author

Fig. 6. Port Warehouse C, view of the central area, featuring the deployment of heating and air-conditioning ducts inside the roof structure, below the new platform and on the wall surface facing the elevator. Photo: Author

Compared to the discreetness of the two preceding conservation projects, the boldness of these interventions initially sparks a surprise. Yet upon closer look, one notes that, despite the considerable size and volume of the new features, their consistency with the original building fabric (particularly the metal roof), and moreover, the overall industrial ambience, together with their alignment with the building's main axes, leads to a dynamic, yet appropriately balanced co-existence; a co-existence that adheres to the guidelines of the ICOMOS texts, including much more vividly the concept of reversibility. Worth noting is that this skilful outcome was achieved by a team of non-specialized engineers, who opted for a creative adaptation of the historic building, taking a notable step further from the otherwise subtle projection of modern additions in the local restoration projects of the mid-1990s.

*Vagianos Clinic: The challenge of multiplicity*

In more recent times, particularly after 2015, Thessaloniki saw an unprecedented rise in foreign arrivals, namely tourists, migrants and investors seeking to obtain residence rights in Greece. Their accommodation required extra hotel rooms and apartments (either for rent or purchase), an event that led in turn to numerous historic buildings being reused as hotels and apartment units. A typical example is that of the Vagianos Clinic (50, Chalkidikis Street). A two-storied healthcare facility, it was built in 1931 in the local eclectic style, featuring, in addition, in the interior, a main corridor flanked by rooms with floors of timber and ceilings with decorative plasterwork. In later years, it served as a house and conservatory, before being conserved and reused as an apartment unit, in 2022<sup>15</sup>.

Adaptation to its new use entailed the conversion of the four separate spaces flanking the main corridor on the ground floor and upper floor into eight distinct apartments, each with its own kitchen and bathroom. The consequent multiplicity of service areas exposed the building to the deployment of expanded drainage, water supply and electricity networks, next to those of heating and air-conditioning, mechanical vertical movement and safety systems.

An evidently tough issue, the overall arrangement of these installations without causing harm to the special character of the building was handled with certain basic moves: the kitchens and bathrooms were placed right next to each other, plumbing and cabling were concealed in newly created vertical shafts, as well as in the substructure of the bathrooms' floor, sensitively added on top of the original timber flooring, the internal units of the fan coil heating and cooling system were fitted on top of the lowered ceiling of the bathrooms, allowing clear views of the original ceiling plasterwork, remaining cablework was concealed in the walls and ceilings, in conjunction with the installation of plain, yet clearly modern visible fixtures, a glass elevator was accommodated in the conveniently sized well of the U-shaped staircase and the bulky external unit of the heating - cooling system was hidden beneath a ground-floor balcony on the obscure back front (Figs. 7, 8).

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<sup>15</sup> Regarding the historic development and cultural significance of the clinic, see: Bakalbassi, M. et al. (2021). *Apokatastasi diorofou ktiriou charaktirismenou os ergo technis kai esoterikes diarythmises gia epanachrisi tou os katoikies* (Restoration of two-storied building, designated as a work of art, and interior rearrangements for reuse as residences) [Technical report of private restoration project], 3-21.

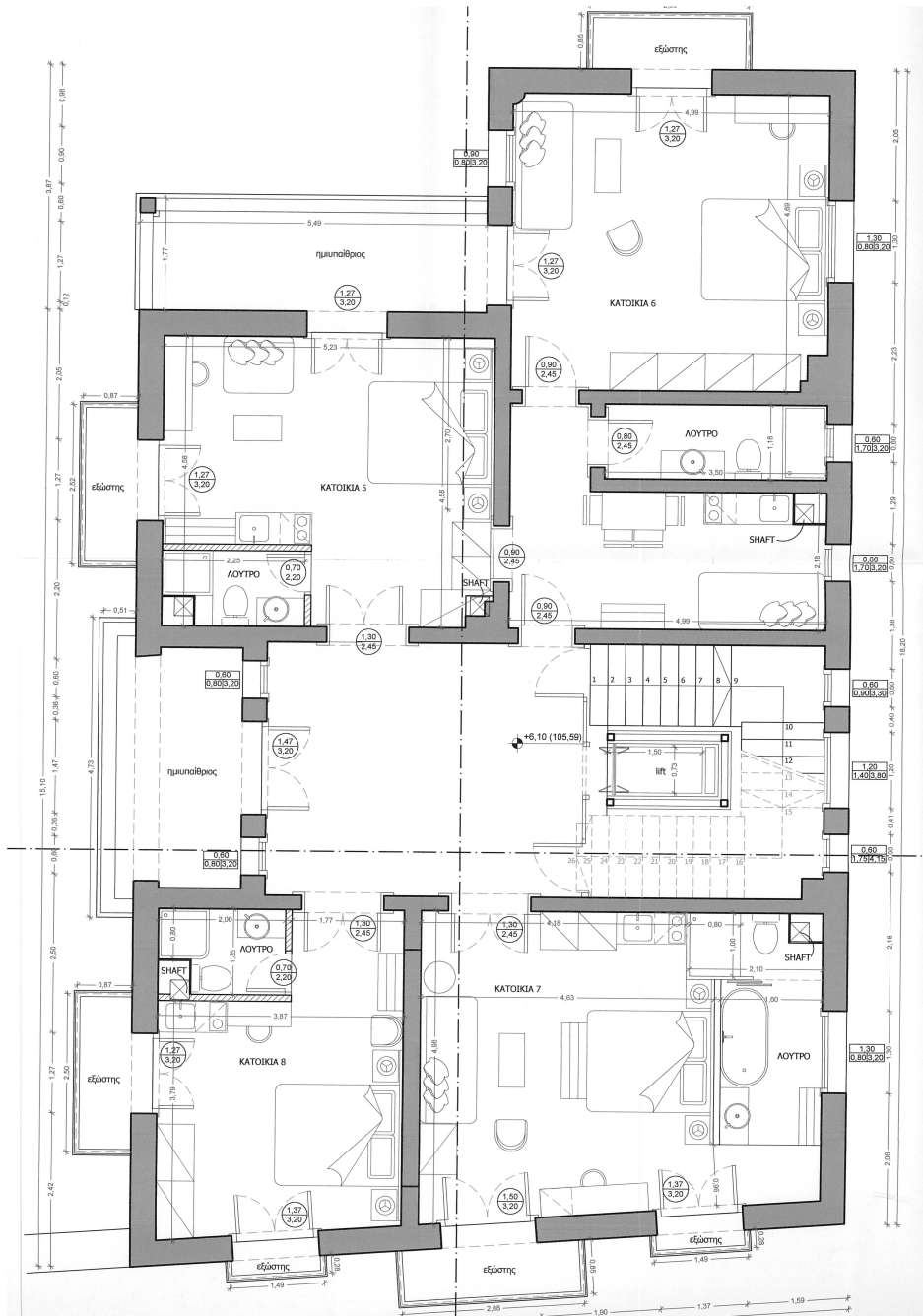


Fig. 7. Vagianos Clinic, plan of the upper floor, displaying the arrangement of the new kitchens and bathrooms right next to each other, in conjunction with the creation of vertical shafts for the deployment of plumbing and cabling. Source: Archive of the Hellenic Ministry of Culture, Service of Modern Monuments and Technical Works of Central Macedonia



Fig. 8. Vagianos Clinic, view of a typical apartment, with a fan coil unit fitted on top of the lowered ceiling of the bathroom, and plain, yet clearly modern visible fixtures. Source: [https:// villa-clio.com](https://villa-clio.com), retrieved October 31, 2025

The above choices, which, for the most part, have become common practice in similar projects, attest to a highly skilful outcome, provided by a team of specialized engineers, with an overall priority in achieving maximum discreteness. The latter, and in particular the consequent minimum alteration or concealment of original building parts and decorative features, signify a faithful acknowledgement of the ICOMOS recommendations, while bringing to mind specifically the restoration of the house on 19, Epimenidou Street, though with a much stronger emphasis on reversibility and a more daring selection of compatible visible fittings. These variations echo the deeper absorption of the wider theoretical framework of ICOMOS in local conservation matters over the last three decades, an immediate consequence of the huge increase in the number of specialized professionals and parties involved since the mid-1990s.

#### *Thessaloniki State Conservatoire: The latest developments*

The latest picture on the subject is characteristically provided in a major project of a different type that is currently nearing completion. The restoration of the building of the Thessaloniki State Conservatoire (Fragkon 15 and Leontos Sofou Streets) is a state initiative, managed by the special Service of the Ministry of Culture for the protection of Thessaloniki's "modern" built heritage. It concerns a true landmark in the city's historic landscape, with a highly turbulent past. Built in 1840, as a private residence, the eclectic edifice underwent repeated repairs, reconstructions,

extensions and alterations before becoming home to the local state conservatoire, in 1987<sup>16</sup>. The pressing need to enhance its special character, while also satisfying modern functional and safety standards, led to its complete conservation, which is scheduled to conclude at the end of 2025.

The renewal of the outdated and unrepairable electromechanical installations of the four-level building proved a highly demanding segment of the overall project, given the multiplicity of the currently required systems and the intricate form and structure of the monument. At first glance, one notes substantial similarities with the Vagianos Clinic. For instance, plumbing and cabling were concealed in specially constructed vertical shafts, in addition to being hidden in the substructure of the basement and the walls and ceilings of the separate rooms. Moreover, an elevator was conveniently inserted in a subsidiary space at the west corner of the building, and a fan coil system was selected for heating and cooling, with its voluminous external units grouped in an obscure underground shaft on the hardly visible northwest front. Lastly, the interior was adorned with visible fixtures of plain, yet clearly modern design.

Apart from these actions, one also notes a significant novelty, directly related to the skilful acknowledgement of the variation of the form of the ceilings. Unlike the ceilings on the ground floor, which, for the most part, preserve decorative plasterwork (Fig. 9), the ones on the extensively renovated, in earlier times, upper stories prove conventional, thus allowing the addition of suspended ceilings, which can accommodate larger amounts of equipment (Fig. 10). In view of this benefit, the most demanding functional spaces of the conservatoire, particularly classrooms and study areas, were arranged on the upper floors, while the less challenging offices were fitted on the ground floor.

In all, the selected moves attest to yet another substantial effort to secure the least possible visible intervention in the interior of the building, without ruling out localized gestures of subtle modernity through the visible fixtures. A much more demanding adaptation compared to that of the shortly earlier Vagianos Clinic, the respective, even more ingenious endeavour in the Thessaloniki State Conservatoire building reflects an overall alignment with the ICOMOS principles, both on the examined subject and on a wider basis, which in turn illustrates, once again, the increased specialization of engaged professionals and parties in present times.

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<sup>16</sup> Regarding the historic development, cultural significance and previous treatment of the conservatoire, see: Zarkada, C. (1985-86). Fragkon kai L. Sofou gonia. Othomaniki Trapeza (Corner of Fragkon and L. Sofou streets. Ottoman Bank). In E. Kambouri (Ed.), *Ta neotera mnimeia tis Thessalonikis* (The modern monuments of Thessaloniki). Hellenic Ministry of Culture - Ministry of Northern Greece, 60-63.



Fig. 9. Thessaloniki State Conservatoire, view of a typical ground-floor ceiling, with decorative plasterwork. Photo: Author



Fig. 10. Thessaloniki State Conservatoire, view of a typical, conventional first-floor ceiling, allowing concealment of equipment in a suspended ceiling. Photo: Author

## **Conclusions**

The above analysis leaves no doubt that the arrangement of the necessary electromechanical installations in the course of the conservation of late 19th and early 20th century monuments in accordance with the related principles of the ICOMOS doctrinal texts is a delicate issue, which requires equally exquisite handling, particularly in cases of buildings that are intended to serve a multifaceted public or multiply repeated private function. The review and assessment of the selected case studies in a single city in Greece does not allow ample generalization, nor does it cover all related sensitive issues in the wider European setting, for instance, cutting electrical wiring into historic plaster and placing air-conditioning boxes on facades - both of which are prohibited in Greek conservation practice. Nonetheless, it does allow the deduction of certain basic, practical conclusions.

An initial observation is that a positive outcome is possible, provided, first of all, that the special values and distinctive characteristics of the conserved monument are fully explored and identified. Secondly, the skilful appreciation of the latter, both separately and as a whole, in what could be described as the unique ambience -or more metaphorically the aura- of the building, ought to define compatible courses of action, compatibility being valued on the extent to which they achieve appropriate discreetness.

Within this framework, an industrial facility with a complex structure and intricate machinery may provide a more relaxed context for relevant interventions, even to the point of favouring a dynamic co-existence of old and new, which will still require a consistency of materials and an alignment with the building's initial layout. In sharp contrast, the ornate interiors of an eclectic residence will demand minimum visible interference, an aim indicatively served by the arrangement of service areas in close -if not immediate- proximity, the concealment of plumbing and cabling in replastered walls, fully restored floors and ceilings, and specially created and carefully arranged vertical shafts, the insertion of elevators in conveniently sized subsidiary spaces, the placement of sizable outdoor heating - cooling units in obscure underground shafts on the external perimeter and the deployment of plain, yet modern in design visible fixtures. In all, one needs to remember that electromechanical installations arrangement requires accurate evaluation and acute judgement, if a truly favourable result is to be achieved in conjunction with the related theoretical framework.

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