

**HANS FORAMITTI**  
**A PIONEER OF ARCHITECTURAL PHOTOGRAMMETRY**  
**(1923 – 1982)**

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**ABSTRACT:**

At this opening of the first Hans Foramitti Session the life, professional ideas, and the personality of this Austrian pioneer of architectural photogrammetry shall be presented, based on his self-written CV. Hans Foramitti studied architecture at the University of Technology Vienna (1945 – 1952) and worked as an assistant, researcher and architect in various positions before being awarded his doctorate in 1959. Afterwards he became a public official in the Austrian Federal Office for Preservation of Monuments and Sites. Foramitti contributed remarkably to the development of a unified practical system for the recording and documentation of pieces of art and architecture using mainly the Zeiss photogrammetric cameras, analogue stereo-restitution instruments, and accessories he developed himself. In his office he founded a photogrammetric unit with an archive of stereo-photographs, plans and other documents, which became a Mecca of architects and conservationists all over the world and formed a model for many similar foundations. In 1964 he was part in the foundation of the International Council of Monuments and Sites (ICOMOS), and in 1969 he was co-founder of CIPA, one of its first International Scientific Committees. He was the first Director of the UNESCO-ICOMOS Documentation Centre in Paris, taught at the ICCROM in Rome and at the Academy of Fine Arts in Vienna, where he was awarded the title and position as University Docent in 1980. He was an expert consultant in Japan, Mexico and other countries, and he published nearly 100 papers. Oberrat Univ.-Dozent Dipl.-Ing. Dr.techn. Hans Foramitti died before he could become an Honorary Member of CIPA. The Foramitti Sessions shall be more than that: ISPRS and CIPA wish to thank and honour Hans Foramitti, this great personality, and tell future generations about this extraordinary cosmopolitan, developer and missionary of architectural photogrammetry. The Foramitti Sessions are devoted to Heritage Recording and Documentation, to the state of the art, the development of new methodology, and applications at present and in the future

**ZUSAMMENFASSUNG:**

Anlässlich der Eröffnung der ersten Hans Foramitti Sitzung sollen der Lebenslauf, die beruflichen Vorstellungen und die Persönlichkeit dieses österreichischen Pioniers der Architekturphotogrammetrie so vorgestellt werden, wie es aus seinem selbst geschriebenen Curriculum vitae hervorgeht. Hans Foramitti studierte Architektur an der Technischen Hochschule Wien (1945-1952) und arbeitete dann als Assistent, Wissenschaftler und Architekt in verschiedenen Positionen, ehe er 1959 sein Doktorat erwarb. Danach wurde er Beamter im Bundesdenkmalamt (BDA) in Wien. Foramitti trug Beachtenswertes zur Entwicklung eines einheitlichen und praktischen Systems für die Aufnahme und Dokumentation von Kunstgegenständen und Architektur bei, wofür er - hauptsächlich von Carl Zeiss - photogrammetrische Kameras, Analogauswertegeräte und selbstentwickeltes Zubehör einsetzte. Im BDA gründete er eine photogrammetrische Abteilung mit einem Archiv für Stereobilder, Pläne und andere Dokumente, das zu einem Mekka für Architekten und Konservatoren aus aller Welt und zu einem Vorbild für viele ähnliche Neugründungen wurde. 1964 hatte er Anteil an der Gründung des Internationalen Denkmalrates ICOMOS und 1969 war er Mitbegründer von CIPA, einem von dessen ersten internationalen wissenschaftlichen Komitees. Er war der erste Direktor des UNESCO-ICOMOS Dokumentationszentrums in Paris. Er lehrte am ICCROM in Rom und an der Akademie der Bildenden Künste in Wien, wo er sich 1980 habilitierte. Er war Berater in Japan, Mexiko und anderen Ländern und veröffentlichte etwa hundert Beiträge. Oberrat Univ.-Dozent Dipl.-Ing. Dr.techn. Hans Foramitti starb, ehe er Ehrenmitglied des CIPA werden konnte. Die Hans Foramitti Sitzungen sollen mehr als das sein: ISPRS und CIPA möchten Hans Foramitti ehren, dieser großen Persönlichkeit danken und zukünftigen Generationen von diesem außergewöhnlichen Weltbürger, Weiterentwickler und Missionar der Architekturphotogrammetrie berichten. Die Foramitti Sitzungen sind der Datenaufnahme und Dokumentation des Kulturerbes gewidmet, dem Stand der Technik, der Entwicklung von neuen Methoden und praktischen Anwendungen in der Gegenwart und in der Zukunft.

**HANS FORAMITTI SESSIONS**

CIPA, the International Scientific Committee on Heritage Documentation (1969-2000 Comité International de Photogrammétrie Architecturale), was jointly founded by ICOMOS and ISPRS in 1969, and the Austrian architect Hans Foramitti was one of its most active motors. At the ISPRS Congresses in Vienna 1996 and Amsterdam 2000 CIPA organised special

sessions together with representatives of UNESCO and ICOMOS. In 2000 CIPA decided to regularly contribute to the ISPRS Congresses with a special session on the state of the art covering recent and expected technical developments, interesting applications as well as the future needs in the area of recording, documentation and information management of the cultural heritage. At the beginning of the first Hans Foramitti Session CIPA remembers this prominent pioneer of

architectural photogrammetry. His Curriculum Vitae (Kraus 1982, Carbone 1983) is based on what he himself wrote shortly before his death. The most important parts shall be presented here with some reminiscences inserted by the author who met him first in 1962 and has known him well since. Indeed it was Foramitti who motivated the author years later to devote much of his time to CIPA.



Hans Foramitti (1963)

#### HANS FORAMITTI'S CURRICULUM VITAE

“Born on 20 March 1923 in Vienna. He finished school in 1941 and was on military service in World War II from 1942–1945. In 1952 he graduated from the Faculty of Architecture of the University of Technology Vienna as Diplom-Ingenieur for Architecture. During the vacations he spent time at the Academy of Arts and at the Academy of the Louvre in Paris. His first job was as a junior assistant at the Institute of Building Art, Building Survey and Preservation at the University of Technology Vienna and at the same time he worked for an architect on the reconstruction of the Church on the Leopoldsb-berg, Vienna. Foramitti was wholly responsible for the technical planning as well as for the reconstruction works. In 1955 he went to Italy to study the archaeological works under St.Peter's Cathedral and the conservation of the grave of St.Peter.

1955 to 1957 Foramitti had a position in the Austrian Board of Works II and was actively involved in the construction of the Federal Research Institute Arsenal. 1957 to 1959 he served as Librarian at the University of Technology and at the Austrian National Library, receiving a further qualification for higher library service, specially also for preservation and stewardship. During this time he finished his thesis on “Orcival and the

Roman Pilgrim Churches of the Auvergne” and received his Dr. of Technical Sciences at the University of Technology Vienna.

End of 1959 he moved to the Austrian Board of Works I and was delegated to the Department of Architecture of the Federal Federal Office for Preservation of Monuments and Sites. (Bundesdenkmalamt, BDA), where he finally served in the rank of a Chief Councillor (Oberrat).

Already in the early sixties he started to test architectural applications of photogrammetry in order to overcome the difficulties he had with often dangerous, incomplete and unreliable manual surveys of inaccessible areas, e.g. high up on unprotected scaffolds, where he preferred to do the work himself instead of sending one of his collaborators. In 1963 he bought the first instruments, 1964 saw the arrival of the first measuring camera, and in 1966 the photogrammetric unit of the department of architecture was officially founded, becoming a department in 1968.



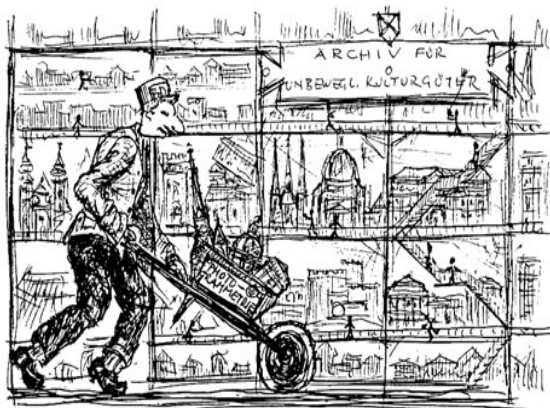
Foramitti at dangerous recording work high up on a scaffold (St.Stephen, Vienna 1960)

In 1968 Foramitti was also entrusted with the international contacts of the Federal Office. Foramitti spoke perfect French, German and also English. In 1964 he participated in the Venice conference of architects and conservationists where he played a role in the foundation of ICOMOS, the International Council on Monuments and Sites. (The author met him by chance at the railway station when he came back to Vienna. He was smiling and happy about the results and mentioned that it would bring about the chance to more easily introduce photogrammetry to conservation)



The Zeiss TMK 60 with Foramitti's accessories (1964)

Some years later he became the first Director of the UNESCO-ICOMOS Documentation Centre in Paris, another centre founded by him and his international friends. In Austria he was Vice-President of the National ICOMOS Committee, and he became the head of the Austrian Convention Bureau, i.e. the person responsible for the 1954 Hague Convention for the Protection of Cultural Heritage in Case of Armed Conflicts. Foramitti had a lot of experiences in this respect. There were enough dreadful examples around in Austria and Europe from World War II which he felt should never occur again.



A self-portrait: Foramitti as collector of monuments (1963)

Foramitti travelled to erect the ICOMOS Blue Shields at many cultural heritage sites, and he and his team collected photogrammetric stereo-images for an archive of monuments. He always said to be a collector of monuments. He was the author of a four volume handbook on the Protection of Cultural Heritage and it was Foramitti who started to publish the Austrian Heritage Map (at 1:50.000). In 1968 Foramitti started teaching at the International Centre of Conservation in Rome (ICCROM), where he gave a highly appreciated course every year on the application and value of photogrammetry as part of the conservation process. Foramitti saw photogrammetry as a way of recording and documenting cultural goods and so providing protection against catastrophe, especially in the case of armed conflicts, earth quakes and fire.

He saw this as being particularly useful for emergency interventions and in developing countries.



Foramitti among his students (1976)

From 1968 to 1970 Foramitti took a leading role in the foundation of CIPA. His close friend Maurice Carbonnell became President of the pioneering group of eight, four from ICOMOS and four from ISPRS. The contacts between the two parent societies of CIPA had been arranged by Carbonnell via his office IGN in Paris, and by Foramitti first via Prof. Dr. Franz Ackerl of the University of Agriculture Vienna and later via Prof. Dr. Karl Neumaier, President of the Federal Office for Standards and Surveying and Lecturer for photogrammetry at the University of Technology. Both these men played a decisive role in the Austrian and International Society of Photogrammetry. The Committee still meets, annually for discussions and biennially for a public scientific symposium.

Between 1970 and 1974 international contacts took Foramitti several times to Mexico. Here he was a consultant to the Churubusco Conservation Centre for Education and Training. In 1981 Mexico opened a department for the architectural photogrammetry of historic buildings, taking Foramitti's department in Vienna as its model. Many other departments were to follow e.g. in Bonn and in Ankara.

In 1973 Foramitti survived a serious car accident. He was obliged to reduce his activities and concentrated primarily on his duties in the Federal Office.



Foramitti international : ICOMOS General Assembly 1981

But in 1976 after the terrible earthquake in Friuli, Italy, Foramitti planned and executed emergency fieldwork to document the extent of the damage and provided the basis for technical measures to prevent further damage and collapse. He worked particularly on the preservation of the grossly damaged dome of Venzone: His office made the photogrammetric restitutions and produced the plans which were to help the reconstruction of the unique dome. He proclaimed a special earthquake photogrammetry and his dreams since Friuli was to persuade the industry to construct a photogrammetric field restitution plotter. In 1980 he was able to announce a recommendation from the Head of the World Heritage Centre of UNESCO in this direction. (He would be proud to know that it exists today)



Photogrammetrically plotted cracks after the earth quake in Friuli (1976)

Foramitti closed his CV with the statement that “he had published about 100 scientific papers on: the history of technology and architecture; the preservation, revitalisation and preservation of old town centres; the prevention and repression of theft of artwork; emergency interventions; the construction of instruments; photogrammetry and surveying; safety

measures; education and training on matters concerning libraries and documentation; horticulture; etc. Many papers have been translated and published in foreign countries, he counted 14 different languages. Some of his papers were even published in the Austrian Journal for Surveying and Photogrammetry.”

From 1969 he taught at the famous Vienna Academy of Fine Arts, where in 1980 he was awarded the position of University Docent for ‘conservation, restoration and investigation of works of art under special consideration of photogrammetric methods’.



Foramitti with his wife and his team in Vienna (1972)

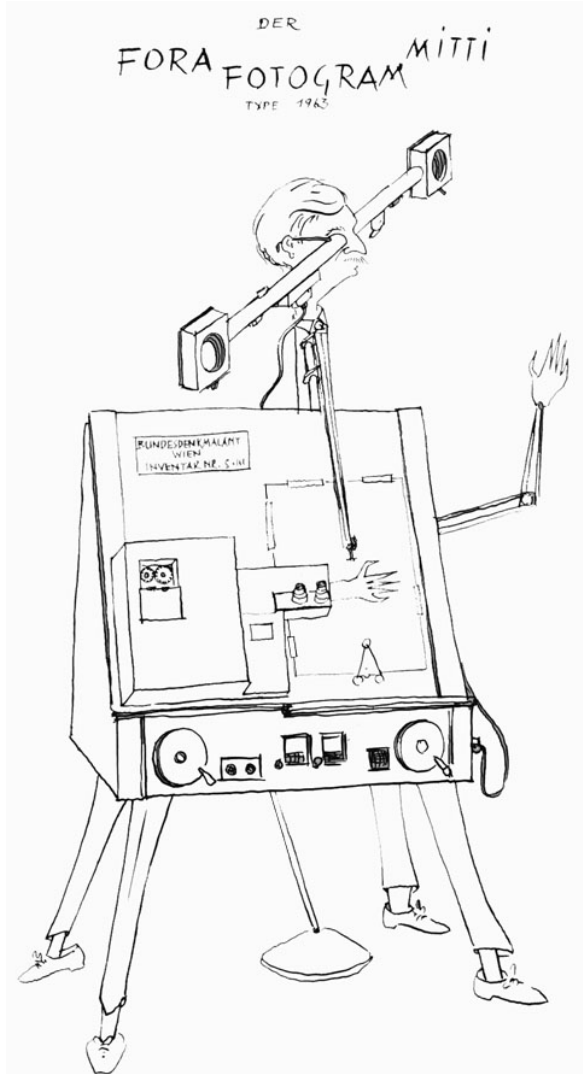
The 1981 CIPA Symposium on Photogrammetry in Architecture and Preservation of Monuments took place in Vienna. The Symposium Organizers were Hans Foramitti (for CIPA and the Federal Office for Preservation of Monuments and Sites.), Karl Kraus and the author (University of Technology Vienna), and Franz Mairinger, Carl Pruscha and Wilfried Posch (Academy of Fine Arts Vienna). It was to be the last time Foramitti’s colleagues could follow his clear explanations. He was not able to finish the proceedings of the symposium; this had to be done by his collaborator Gottfried Böhm. Hans Foramitti died from a heart attack on 6 June 1982.

#### HANS FORAMITTI’S PRINCIPLES

Foramitti’s application of photogrammetry was guided by scientific principles which the author has recalled from Carbonnell (1983) and from personal discussions with Hans Foramitti.

1. Any building survey must provide an ‘as found’ record not just the idealised geometry. Deviations from smooth and pure geometry are essential features of art.
2. Only photogrammetry can achieve such record and can reconstitute the object in a controlled and repeatable way (Today we have laser-scanning in combination with photogrammetry. Foramitti would have used it !)
3. Photogrammetry can provide in 1/100 of a second more than hand surveying in 100 hours. Foramitti used to joke: Photogrammetry is 36 million times faster in recording and is free of mistakes!
4. Photogrammetry produces records like tin preserves. Restitution and plotting of plans can be done later when needed, if needed (Meydenbauer’s ideas will soon be 150 years old).

5. The quality of photography has a considerable influence on the accuracy and reliability of the survey. Thus the photography must be of the best possible quality and taken in anticipation of the multipurpose requirements of the survey.
6. Duplicate photogrammetric images, with adequate control information, should be archived in separate geographic locations (as a security measure). Historical images should also be archived along with contemporary documentation. The images have to be treated very carefully.



He totally identified himself with photogrammetric recording:  
The Forafotogrammitti, also a self-portrait (1963)

7. A small staff of recorders must be able to make surveys of a large number of facades daily. (In Austria of the early sixties one of the main demands of architectural photogrammetry was the survey of street facades. The damages of war-time were to be repaired and the ruins were to be replaced by new buildings which had to fit to the spaces left by the old, at least in certain protected groups.
8. The photogrammetric equipment for recording and plotting has to form a system which is simple and easy to operate. Foramitti invented and developed special devices and interfaces to achieve this, such as a special large level and

an orientation cube, inclination wedges for the realisation of oblique camera direction and just for always the same angle +/- 29,9540 grades. This funny angle corresponded to (from other productions stemming and thus economically available) tooth wheels of the analogue inclination computer for back-transformation of models from an oblique position to the horizontal. A special small size rectifier was constructed just for the same inclinations. Carl Zeiss produced all these accessories, thus increasing remarkably the importance of architectural photogrammetry. And other firms followed (Jenoptik Jena and Wild Heerbrugg)

9. Orthophotographs (full sized as well as differential rectifications) are no replacement for line drawings which are absolutely necessary for planning and undertaking practical conservation work. But orthophotographs are a valuable addition to conservation documentation being useful for work control.
10. Undevelopments of frontages and also of curved objects can only be done reliably by photogrammetric means, because the restitution work for the line-plans will be always perfectly controlled by the images and their rectifications.



In Austria many kilometres of street frontages have been undeveloped (Obenberg, Tyrol, 1966. The most left building became the Austrian Monument of the Month April 2004)

11. The investment needed to develop architectural photogrammetry was high, but the gains in personal safety and the speed, precision, and reliability of data capture are much greater. (Current electronic and digital surveying equipment can be now more easily afforded)
12. Photogrammetry doesn't only produce images and coordinates, it delivers documents of a building or monument in time. These can then be compared with future images for the detection of changes and trends.

Hans Foramitti had a catalogue of precisely numbered cards containing his well formulated ideas and principles, wherefrom he could easily prepare lectures, papers and presentations. The above could be some of them.

### HONOURS TO HANS FORAMITTI

In 1968, Foramitti was awarded the silver order of merit of the Republic of Austria, and since 1976 he was Associated Foreign Member of the Belge Academy of Science and Arts.

Hans Foramitti died before he could become an Honorary Member of CIPA. The Foramitti Sessions shall be a greater honour, thanking and honouring this great personality and reminding future generations of an extraordinary cosmopolitan, developer and missionary of architectural photogrammetry and documentation.

### Acknowledgement:

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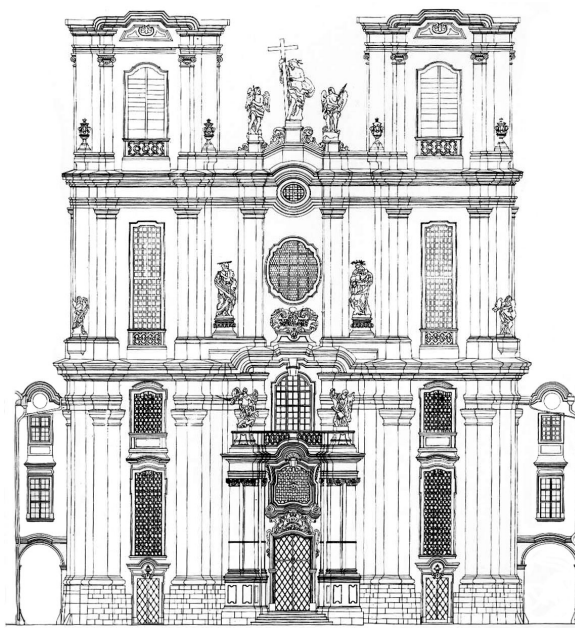
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Front view of the Abbey of Melk, without the towers, plotted originally 1:50. (Out of Carbonnell, 1983)