Nexus 2000
Kim Williams

The Nexus 2000 conference, the third conference in the biennial Nexus series of international, interdisciplinary conferences dedicated to the relationships between architecture and mathematics, took place 4-7 June 2000 in Ferrara, Italy. This year's conference began with the traditional evening of presentations in Italian, in honor of our host city and country. Luigi Pepe provided us with an introduction to architecture and mathematics in the history of University of Ferrara (the most famous graduate of the University of Ferrara is Copernicus). Giangiacomo Martines examined how studies of the Pantheon in Rome have recently been revolutionized (Dr. Martines's text was not included in the book, *Nexus III: Architecture and Mathematics*, but appears for the first time in this issue of the *NNJ*). Franca Caliò and Elena Marchetti of the Politecnico di Milano demonstrated a fascinating application of linear algebra to architectural forms.

The theme of the Monday 5 June was architecture and mathematics in Italy, with an emphasis on the Renaissance. Paul Rosin presented Serlio's construction of ovals (Dr. Rosin's paper, to appear in the *Mathematical Intelligencer*, does not appear in *Nexus III*); Carol Martin Watts examined the urban planning strategy of the Roman; Rachel Fletcher presented a beautiful geometric analysis of Palladio's Villa Emo; Paul Calter and Kim Williams explained the challenges of measuring Michelangelo's architecture. In the afternoon session, David Speiser looked at what lies behind Raphael's depictions of architecture; Mark Reynolds revealed the subtle, hidden geometric system of the Cappella dei Pazzi in Santa Croce.

Tuesday 6 June began with a continuation of the theme of the first day, with Stephen R. Wassell's overview of art and mathematics before the Renaissance. Rocco Leonardis presented his study on the geometry of a Greek temple in Sicily (Architect Leonardis's paper will appear in a future issue of the *NNJ*). The day continued with a new theme: architecture and mathematics of non-European cultures. Unfortunately, a last minute conflict prevented Zafer Sagdiç from presenting her paper on Ottoman architecture and mathematics, but the text does appear in *Nexus III*; William D. Sapp led us to Machu Pichu, land of the Inka Empire to see how the Inkas used measure in their architecture; Yvonne Dold-Samplonius demonstrated how the enormous mathematical skills of 15th century Samarkand were applied to the calculation of arches and domes.

The conference's last day, Wednesday 7 June, had the theme of 20th century architecture. Leonard K. Eaton studied the dimensions of the art glass windows of Frank Lloyd Wright in order to understand the aims of America's master architect; British abstract artist Tess Jaray takes us on a walk from her studio to town square to show us how her geometric pavement designs evolved (see Kim Williams's article on Tess Jaray's pavement designs in the present volume of the *NNJ*; Alessandra Capanna took us with her to the Philips Pavilion at the Brussels World's Fair, a collaboration between the French architect Le Corbusier and Greek composer Iannis Xenakis.

A new feature of this year's Nexus conference was Tuesday afternoon's round table discussion led by Carol Martin Watts on "Methodologies of Mathematical Analyses in Architecture", a transcript of which appears in the present volume of the *NNJ*. We took

advantage of the international, interdisciplinary character of the Nexus conference to provide panelists for the round table discussion. The topic was particularly relevant to the theme of the Nexus conferences because there is no established standard for analyses of architecture and mathematics, a lack sorely felt when one tries to draw comparisons between two studies of the same building. This discussion will help was also aimed at overcoming the objections of those who see mere charlatanism and numerical manipulation in mathematical analyses of architecture, a bad reputation which is unfortunately fostered by the unorthodox techniques used in many studies.

An important adjunct to this year's conference was the exhibit of student work from two secondary schools, the Istituto statale sperimentale d'arte di Monza and the Liceo Artistico di Busto Arsizio. Professors in these schools had organized their academic curricula for the year around the studies of architecture and mathematics; the results were on exhibit at the MusArc (Museo Biagio Rossetti) during the conference. The exhibit was curated by Roberto Di Martino and Giorgio Faccincani; Liliana Curcio has written a report in English and in Italian about the schools' work.

Finally, a much appreciated feature of each Nexus conference is the post-conference workshop tour that is offered. This year's tour of Venice, featuring the architecture of Carlo Scarpa in the morning and the work of Andrea Palladio in the afternoon, was led by Timothy Brown, director of the European Study Program of Illinois Institute of Technology's School of Architecture. Architect Brown's report on the 2000 Workshop tour also appears in the present volume.

The Nexus 2000 conference was sponsored by the Faculty of Architecture "Biagio Rossetti" of the University of Ferrara and by Leonet, the Internet Service Provider that hosts the *Nexus Network Journal*. Leonet is part of the SESA group, creators of TECNO++, the IBM solution for office management for architects and engineers. *Nexus III: Architecture and Mathematics*, this year's book, was published by Pacini Editori, Pisa.

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