

# The Education of An Architect: 3 Points of View—Rowe, Hejduk and Ferrari

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## INTRODUCTION: THE HISTORIAN, THE POET AND THE MAGICIAN

This paper will attempt to make a preliminary reading of the main achievements and impacts of three remarkable architectural educators – Colin Rowe, John Hejduk and Olivio Ferrari<sup>1</sup>. Each of these teachers passed within six years of each other in 2000, 1999 and 1994 respectively. By placing the work of these three great teachers in parallel the expectation is that a larger understanding about architectural education may emerge that may assist the present generation of teachers to address current problems and find future directions. One can begin to study the didactic life of these teachers as one would enjoy walking through the rooms in good building. It is our contention that the study of teachers is as valuable as the study of buildings. Rowe spent the better part of a long teaching career at Cornell, Hejduk at Cooper Union and Ferrari at Virginia Tech. Rowe gave us the vocabulary to teach, Hejduk the poetry to see and Ferrari the questions to proceed. Generations of their students have gone on to make a considerable difference in both the practice and teaching of architecture attesting to the exponential impact of three extraordinary teachers.

## SCIENCE AND ART IN RELATION TO THE EDUCATION OF AN ARCHITECT

The education of an architect resides between the registers of science and art between episteme and *teche*.<sup>2</sup> How we chose to define and interrelate science and art in our time is one of the key issues for the present generation of architectural educators. Whatever the definitions of science and art it is imperative that a teacher of architecture be ca-

pable of artfully navigating between these two end conditions of knowledge – the metaphysical desire to know and the poetic desire to make. One is an urge towards the conceptual the other an urge towards the beautiful. At the highest levels science and art fold into one unity. This is what Max Bill termed, after Van Doesburg, Concrete Art— where the logical and the beautiful occupy the same place and time. We may understand science and art not so much as clearly demarcated disciplines but rather as two fundamental human desires or capacities. At one moment the human mind aspires to the cool exactitude of a logical net catching all inconsistencies, and at another moment human beings act from the wellspring of the interrelated life of the five senses.

The reason why the questions of science and art are so critical to the education of architects is that architectural education, like the Renaissance, is at the intersection of science and art. For example, what part of the development of perspective is science and what part is art? The thing that results in what we now so naturally call perspective is in fact a combination of two kinds of knowledge. However without the combined foundations of scientific thinking and artistic making perspective would not be possible. The same is true for architectural education. The possibility of architectural education depends on the same shared foundation of knowledge. An architect is a individual that is consciously and deliberately *not* a scientist or an artist yet must know much about both sensibilities. The education of an architect is purposely poised between the scientific and the artistic - between the legitimate and constructive. These are the lessons of Vitruvius and Alberti.

Science, Art and Architecture in the University:

Architectural education simply could not survive alone and perhaps this is why architectural education primarily exists today within the framework of a university setting despite the evolving difficulties inherent in such a placement. When science is reduced to information and art to the communication of self-expression architectural education suffers. Unfortunately this is the state of science and art at many universities today.

This environment makes the necessity for studying great teachers more apparent. Within this reduction of science and art the potential of architectural education is significantly diminished.

One has the sense that the three teachers selected for this preliminary study had an implicit and explicit didactic position about architecture relative to science and art that continues to be relevant today. Therefore it is timely to put forth their didactic content as both a remedy to the present situation and an inspiration for the future.

Rowe the historian searched for the science *in* history that was germane to making architecture. He depended on the existence of a science of history from which to generate his observations and formulations. His search opened up new vocabularies of understanding at both the scale of the building and the scale of the city. He combined a typically British eloquence of language along with the penetrating influence of Germanic thinkers such as Karl Popper and Ernst Cassirer. With Rowe, history escaped the lecture room and found its way into the studio. History went from a slide projected on a wall to the drawing on a desk.

Hejduk made a highly attuned physical and spiritual environment at Cooper Union that protected and fostered the narratives and myths of the maker. He was a poet intensely dedicated to looking at the work of other poets or 'makers' such as Mondrian, Gris, Gide and Proust. Hejduk employed with great affect the idea of architecture *as* painting and architecture *as* literature. His method of employing analogies gave a special breadth to the problems he posed to his students such as designing a house in the manner of Juan Gris.

Ferrari, a child of Ulm and the tutelage of Max Bill, had an unrelenting belief in the philosophical im-

manence of form and the secret life of objects that resides within. Through his extensive knowledge of philosophy he raised the intellectual level of his students and the work they produced. Rather than use the philosophical term *mind* he preferred the word *brain* but he *meant* mind. He focused not so much on architecture but rather on the architect *as* student. For Ferrari the cultivation of the free sovereignty of individuals as they developed their capacities as makers was of the utmost importance.<sup>3</sup> He was seeking an ethical equilibrium in himself and his students.

### COLIN ROWE: BUILDING WITH WORDS

Colin Rowe was a gifted observer of architecture who through his written and verbal eloquence maintained the continuity of the traditions of architectural culture across epochs and challenged its future. He had a formidable ability in language and thought that overcame a lack of drawing skill.<sup>4</sup> In a very real sense he was able to draw observations and form conclusions with words. There have been few teachers in architecture like Rowe that have mastered both the realms of the lecture room and the studio. Colin Rowe was able to navigate in the space between history and design - between what happened and what might happen. He had insight into the connections between the actual and the possible. Rowe in some ways literally invented a vocabulary with which to teach architecture. Teachers of architecture often do not acknowledge the sources from which their teaching vocabulary originates.<sup>5</sup> How can one teach architecture without the ideas of Plato and Aristotle and without the words of Rowe and Frampton? For example when teachers discuss the idea of transparency with students then they owe a debt to Rowe. In a sense he offered an entire vocabulary with which to capture the nuances of architectural form and the stories of architecture.

Rowe did not invent new words but he did invent new ways of understanding words in an architectural sense. The string of articles and essays published by Rowe since 1947 have taken on legendary status in schools of architecture well before their codification in the 3 volume collection entitled, *As I Was Saying* (1996). Some of the more well known are 'The Mathematics of the Ideal Villa', 'La Tourette', and 'Transparency: Literal and Phenomenal'. Another essay by Rowe perhaps less famous

but no less important was 'Ideas, Talent, Poetics'. Here Rowe was at his best using Platonic and Aristotelian thought to make a comparative analysis of architects and their buildings.<sup>6</sup> Rowe tells us that Palladio had Ideas, Borromini had Talent. Although there is no way to prove Rowe's proposition in an absolute sense this kind of broad formulation had a ring of truth to it which bore itself out upon closer inspection of the buildings and architects in question. The article reads as a summation of many of the major themes Rowe took up across his teaching and scholarly life. The generalizations or tendencies that Rowe articulated allowed students and faculty to better understand specific differences in architectural physiognomy. Like T. S. Eliot's essay 'Tradition and the Individual Talent', Rowe presented variations of the push of history upon the talent of an architect and the pull of an individual's talent away from history.

In terms of reading the form of a building and its setting like a text the article 'La Tourette' may be the single best essay in the last half century. One should not visit La Tourette without knowing what Rowe wrote. He made striking observations about the long entry approach that tangentially slips to the side of the building rather than meeting the form frontally. The floors were read as if they were elevations conceived vertically and rotated horizontally. One cannot walk upon the floors of La Tourette without thinking that they are walking on top of elevations! As he often did Rowe visited the place and wrote down what his mind saw while as he was walking.<sup>7</sup>

Rowe's thesis supervisor was Rudolf Wittkower who evidently thought that Rowe's article 'The Mathematics of the Ideal Villa' was rather loosely construed and lacked real historical grounding.<sup>8</sup> Here the teacher Wittkower is perhaps both correct and stubborn at the same time. In his view Rowe's essay was lacking the necessary Germanic art historical method and rigor to make it legitimate scholarship. Rowe perhaps intuitively knew that in the setting of architectural education it was appropriate. The article had the right balance between an analysis of the historical development of the Palladian villas in relation to Corbusian villas and offered close visual observations that were just right for the context of teaching architecture. Rowe did not kill the possibility of architecture with history, which often can happen, yet offered a neces-

sary measure of historical erudition and imagination that provided students and teachers with historical context.

### JOHN HEJDUK: THE ADVANCEMENT OF SCIENCE AND ART

Late in his life John Hejduk was invited to present a lecture on education where he briefly distilled what the work of Cooper Union was about with his characteristic sense of understatement - 'We make things well and we like to fabricate parts and we like parts.'<sup>9</sup> This simple statement contains a number of important ideas. First the idea of making or *poiesis* is the primary preoccupation. Cooper is a school that makes. The publications produced by Cooper Union over the years exemplify a commitment to making things well. Students are encouraged to become pragmatic poets in the Greek sense of the words. The School linked action with making. The idea of making things well qualifies the act of making to ensure the activity ends in a thing well made. This is a crucial point in that the reason to make only exists if the standard of production is set at a high enough level of achievement. This is how science and art advance at Cooper - through the thought that is put into the affinity for making. As in the idea of *-homo faber* the notion of fabrication was important as well as an interest in separate pieces. Often the joints are more about the abstraction of form abutting form like in a painting rather than a detailed adoration of craft as is evident in the work of Kahn or Scarpa. Cooper at times was more a-tectonic than tectonic.

The now famous nine square problem<sup>10</sup> is perhaps the fundamental example of the pedagogy of Hejduk. Here the eternal order of the nine square grid of columns is introduced to the beginning student who literally discovers the basic elements of architecture and their interrelationships. One can sense the presence of the ghost of Palladio hiding in the depths of the nine square problem and giving it a hidden historical legitimacy.<sup>11</sup> That this is a problem and not a project is an important distinction. The term problem is a scientific one suggesting serious study and physical research. Like scientists the students were positing hypotheses on architecture. The nine square problem transcends any possible project. The problem was bigger than any possible answer although ultimately Hejduk felt one student had finally resolved the problem to the point that it could be retired.<sup>12</sup> In

what may appear at first glance to be an exceedingly abstract problem one quickly realizes the concrete nature of the task that is broken down into 17 specific operations that each student goes through. Cooper under the guidance of Hejduk always combined the imagination of a dreamer with the rigor of five semesters of structures. It was an idyllic and hard-nosed place at the same time. One imagines that this is exactly what Hejduk was after. Hejduk was a pragmatic poet that became the heart of a school.

The renovation of the school building itself is in fact one of the finest in the last 50 years reaching the level of Scarpa at Castelvechio. Hejduk makes the building into a thoughtful articulation of the pedagogical questions of the nine square problem and of the educational foundations of the school itself. Hejduk was well aware of the history of his institution and allowed that history to inform his decisions. The renovation is didactic and is undertaken like a problem in a studio. The round elevator core reads like a large column bearing the weight of the entire structure. The space of the great lecture hall sitting literally under the school is filled with the memory of Abraham Lincoln. This is the solidity of space that Hejduk understood so well. The vast shop space occupies the top floor of the building like a factory on top of a school. The amazing photographs taken by Roberto Schezen and Werner Kinkel published in *Mask of Medusa* reveal the private intimacy of the spaces amidst the intensity of the Lower East Side of Manhattan. The school became a private refuge holding back the forces of the city allowing the students to push back against the density of the city and the world.

#### **OLIVIO FERRARI: THE ALLOWANCE FOR EXCEPTIONS AND THE PREVENTION OF THE AVERAGE**

Olivio Ferrari, perhaps lesser known than both Rowe and Hejduk but whose career is no less compelling, taught architecture at Virginia Tech from 1965-1994. He was originally invited to teach at Virginia Tech by Charles Burchard the founding Dean of the College of Architecture.<sup>13</sup> Prior to coming to Virginia Tech Ferrari worked with Max Bill at Ulm and Bernhard Hoesli at the ETH. Together Burchard and Ferrari attracted a strong group of faculty and forged a remarkable program of innovation and experimentation in architectural education that in 2004 completed its 40<sup>th</sup> academic year. Beginning

in 1956 Ferrari took his initial training at the Hochschule für Gestaltung located just outside the city of Ulm, West Germany. At the Hfg he worked closely with Max Bill and was also influenced by the work of Josef Albers and the thought of Max Bense both of whom were teachers at the Hfg.

In the late 1960's Ferrari was instrumental in developing the Foundation Studies Division at Virginia Tech that still thrives today. Ferrari had previously served as an assistant to Bernhard Hoesli who developed the Grundkurs at the ETH. At Virginia Tech Ferrari played a decisive role in the formation of a Study Abroad Program and late in his life the formation of The Center for European Studies and Architecture located in Riva San Vitale, Switzerland, just south of Lugano. He was also one of the driving forces in the formation of an Industrial Design program at Virginia Tech.

Ferrari forged with the help of his wife Lucy Ferrari, a vital Study Abroad program that extended the campus in Blacksburg to include many of the great cities and small villages in Western and Eastern Europe. A didactic relationship was created between emerging young Swiss architects and the school in Blacksburg. This relationship connected Swiss architectural culture to the campus of Virginia Tech and with American architectural culture.

Ferrari believed that one could not teach architecture without a philosophy.<sup>14</sup> By this he may not have meant knowledge of classical philosophy (but that could not hurt!) but rather that a teacher must develop a position that has a foundation. One should in a sense 'teach what they believe'.<sup>15</sup> He believed in the idea of exceptions. He tried through the magic of his teaching to prevent the average from happening. He was able to detect what was important to an individual student or colleague and held them responsible for pursuing their goals.<sup>16</sup> He acted as a catalyst that intelligently interfered to develop and promote the latent talent that resides in individuals.<sup>17</sup> His interest was to further develop and refine their individual capacities in thought and action. Ferrari taught the person rather than the subject.<sup>18</sup> Here the education of an architect took precedence over teaching the academic subject of architecture.

He was exceptionally well read in philosophy and architectural theory across a number of languages (German, French, Italian, English, Spanish and the

four official languages spoken in Switzerland). He traveled extensively and continuously throughout his professional life in Europe, Asia, Africa and the Americas. His teaching depended on a cultivated sense of history through direct contact with cities and buildings and the emerging contemporary architectural scene. Ferrari brought together a highly developed sense of the tradition represented by European architectural culture along with his keen awareness of the special sense of freedom that resided in an American student.<sup>19</sup>

Olivio Ferrari received the ACSA Distinguished Professor Award from the Association of Collegiate Schools of Architecture in 1990. Kenneth Frampton, in assessing the influence and impact of Olivio Ferrari, wrote a perceptive and astute piece to mark his passing that is quoted in part below:

'Within the academy, the rarest of beings are charismatic teachers, for while teachers of all sorts abound, the ones that are truly charismatic are few and far between. Olivio Ferrari was just such a teacher...it was hard not to catch, as it were, his unique combination of wit and engagement, of modesty and self-assertion, veering constantly towards the provocative in order to reveal to both the protagonist and himself that flash of insight that would enable one to proceed.'

'Homo faber by background, temperament and formation, but a teacher, a thinker and a raconteur, by default and vocation, Ferrari was open to the play of the mind wherever he found it.'

'Above all else Ferrari was a catalyst, a man who made things happen, the one who inspired students, who created schools, who forged improbable ties across seemingly unbridgeable gulfs...'

'He was when all is said and done, the very tectonic soul of VPI; the school he created *de novo* under the leadership of Charles Burchard. Star but not a star, known but unknown, a constant source of energy, a myth; his will be a hard act to follow.'<sup>20</sup>

This is indeed high praise for Ferrari from a distinguished teacher, historian and critic. Although it may appear almost improbable that a teacher could be that good, it is in fact a strikingly accurate account about Ferrari. The story of Ferrari once it has been told will place him in the first rank of architectural educators of the last 50 years together with teachers such as Rowe and Hejduk.

#### **CONCLUSION: TEACHING TEACHERS AND THE CURRENT REDUCTION OF SCIENCE AND ART**

No comprehensive study exists on the history of great teachers of architecture or the history of architectural education. These histories indeed would be difficult to assemble but by not doing it we may be slowly erasing an entire tradition. This paper has made preliminary comparative sketches of three brilliant teachers who despite their passing continue to impact the teaching and practice of architecture in profound ways. They and others like them were really the teachers of teachers. Rowe, Hejduk and Ferrari used science and art to form their didactic positions. The coherence and depth of their pedagogical positions suggests that they were keenly aware of architecture's place in the larger world of knowledge and making. How the institution of the university comes to understand science and art in the near future will to a large extent define the site of architectural education. The university as a place of *teaching* has somehow allowed science to be reduced to the mere flow of new information. This has dominated the agendas of many universities in which architecture schools are a part. This flow has been connected to the necessity of funding streams and grants. This is what Heidegger explained as the reduction of scholarly pursuits to research agendas.<sup>21,21</sup> Martin Heidegger, *Off the Beaten Track*, edited by Julian Young and Kenneth Haynes, (London: Cambridge University Press, 2002), 57-85. See in particular pages 64-5.

#### **ACKNOWLEDGEMENT:**

We would like to express our sincere appreciation to Mrs. Lucy Ferrari who assisted in assembling the biography of Olivio Ferrari, her late husband. She offered us keen insights into a time period of great intensity and vitality. The educational contributions of Mrs. Ferrari are significant in their own right and worthy of their own study. This essay is

respectfully dedicated to her longstanding and continuing commitment to architectural education.

Art has on many campuses become an added value or amenity but not an intrinsic part of the university. The future of the art of teaching architecture is very much bound up with the re-definition of science and art taking place on campuses today. There is a need to restore the full scope of episteme and poiesis in a time that seems too busy to care. A commitment to excellent teaching may be the only way to reverse this trend. The education of an architect as conceived by Rowe, Hejduk and Ferrari may provide us all a measure of inspiration and energy to teach well.

## APPENDIX

### *Colin Rowe*

**1920**, Born, Rotherham, Yorkshire, England; **1939-46**, Liverpool School of Architecture, Liverpool University (graduated in 1946 after war service); **1945-47**, studied Architectural History under Rudolf Wittkower at Warburg and Courtauld Institute; **1947**, Published 'The Mathematics of the Ideal Villa'; **1952-53**, Awarded a Smith-Mundt/Fulbright Scholarship, Yale University, (studied with Henry-Russell Hitchcock); **1953-56**, Lecturer, University of Texas at Austin; **1955-56**, Published 'Transparency: Literal and Phenomenal' (with Robert Slutzky); **1957-58**, Lecturer, Cornell University; **1958-62**, Lecturer, Cambridge University; **1961**, Published 'La Tourette'; **1962-85**, Professor of Architecture, Graduate School of Architecture and Urban Design, Cornell University; **1969**, Founded the Institute for Architecture and Urban Studies (IAUS) New York, (with Arthur Drexler); **1970-72**, Architectural Association, Taught in Summer Sessions organized by Alvin Boyarsky; **1984**, Became a U.S. Citizen; **1985**, Recipient of the AIA/ACSA Topaz Medallion for Excellence in Architectural Education; **1985-90**, Appointed Andrew Dickenson Professor of Architecture (Emeritus), Cornell University; **1989**, Published 'Ideas, Talent, Poetics'; **1994**, Published The Architecture of Good Intentions; **1995**, Awarded the Royal Gold Medal of Architecture from Queen Elizabeth and the Royal Institute of British Architects; **1996**, Published As I Was Saying; **November 5, 1999**, died at age 79, Arlington, VA; **2002**, Published posthumously Italian Architecture of the 16<sup>th</sup> Century (with Leon Satkowski)

### *John Hejduk*

**1929**, Born, New York City; **1947-50**, Student at Cooper Union School of Art and Architecture in New York City; **1947-52**, Worked at various architectural offices in New York City, **1950-52**, School of Architecture, University of Cincinnati, B. Arch.; **1952-53**, Harvard Graduate School of Design, M. Arch., Cambridge, Massachusetts; **1953**, U.S. State Department Fulbright Scholarship for Study of Architecture in Italy; **1954**, University of Rome, School of Architecture, Rome, Italy (Fulbright Scholarship); **1954-56**, Instructor in Architectural Design, School of Architecture, University of Texas, Austin; **1956-58**, Worked in office of I.M. Pei and Partners, New York City; **1958-60**, Assistant Professor of Architecture, School of Architecture, Cornell University, Ithaca, New York; **1961-64**, Critic in Architectural Design, Yale Graduate School of Design, New Haven, Connecticut; **1964**, Graham Foundation Fellowship for Studies in Architecture, Architectural League Grant, **1964-2000**, Professor of Architecture, School of Architecture, Cooper Union School of Art and Architecture, New York City; Private Practice, New York City; **1972**, National Endowment for the Arts Award; **1975**, Foundation Building Renovation and Restoration Cooper Union, Municipal Arts Society Award for Cooper Union Foundation Building Renovation, New York State Council on the Arts Award for Cooper Union Foundation Building, August St. Gaudens Medal; **1975-2000**, Dean, Cooper Union School of Art and Architecture; **1988**, Recipient of the AIA/ACSA Topaz Medallion for Excellence in Architectural Education; **July 3, 2000**, died at age 71, New York City.

### *Olivio Ferrari*

**1931**, Born, Langendorf, Switzerland; **1949**, Diploma, Professional School Solothurn, Switzerland; **1956-1959**, Diploma, Graduate School of Design, Ulm, Germany (collaborated with J. Albers, Max Bill, and K. Wachsmann); **1957-63**, Worked in office of Max Bill, Architect, Zurich; **1961**, Academic Fellow, University of St. Paulo; **1961-63**, Assistant to Professor Bernhard Hoesli, School of Architecture, Swiss Federal Institute, Zurich; **1963-65**, Assistant Professor of Architecture, Auburn University; **1965**, Assistant Professor of Architecture, College of Architecture, Virginia Tech; **1966**, As-

sociate Professor of Architecture, College of Architecture, Virginia Tech; **1966-70**, Chairman, Foundation Unit, College of Architecture, Virginia Tech, **1968-1972**, Director, Inner College For Environmental Design, College of Architecture and Urban Studies, Virginia Tech, **1968-94**, Director, Study Abroad Program, College of Architecture and Urban Studies, Virginia Tech, **1969-94**, Professor of Architecture, College of Architecture and Urban Studies, Virginia Tech; **1970-76**, Assistant Dean, College of Architecture and Urban Studies, Division of Architecture and Environmental Design, Virginia Tech; **1982**, Alumni Distinguished Professor, Virginia Tech; Toy accepted in the Permanent Collection of the Museum of Modern Art, New York; **1983**, Excellent Design Award (Gutes Spiel) for Toy Design, West Germany; **1990**, Distinguished Professor Award, Association of Collegiate Schools of Architecture; **1993-94**, Director, Virginia Tech Center for European Studies and Architecture, Riva San Vitale, Switzerland; **July 15, 1994**, died at age 63, Carona, Switzerland

## NOTES

<sup>1</sup> Please refer to the Appendix that precedes the endnotes for brief biographical sketches of Rowe, Hejduk and Ferrari.

<sup>2</sup> The term science is used in a classical sense to mean episteme or knowledge. Invoking this ancient usage allows the term a greater scope and far greater depth than the current usage of the term science as in the phrase modern science. The term art is used in a classical sense to mean making or poetry. The Greek word *techne* may be a better word to use rather than art as the Greeks had no word for our modern term art.

<sup>3</sup> For the idea of sovereignty in relation to education see, Walker Percy, *The Message in the Bottle*, (New York: Farrar, Straus and Giroux, 1975).

<sup>4</sup> Obituary, "Colin Rowe: 1920-1999", *Architectural Research Quarterly* vol.4, no.1,(2000): 9-14. See page 11.

<sup>4</sup> Personal communication, Prof. Olivio Ferrari, undated.

<sup>5</sup> Rowe was constructing a ratio of Ideas with Platonic transcendence and Talent with Aristotelian immanence. These analogies served to explain the great tendencies of architectural expression in history either towards the separable Idea or Entelechy made present in the thing and the corresponding predispositions of the mind of the architects.

<sup>6</sup> Obituary, "Colin Rowe: 1920-1999", *Architectural Research Quarterly* vol.4, no.1,(2000): 9-14."

<sup>7</sup> Obituary, "Colin Rowe: 1920-1999", *Architectural Re-*

*search Quarterly* vol.4, no.1,(2000): 9-14."

<sup>8</sup> Bart Goldhoorn, editor, *Schools of Architecture*, (Rotterdam: Netherlands Architecture Institute, 1996). The volume contains lectures given at the 1996 Congress of the International Union of Architects in Barcelona. The lecture by John Hejduk is on pages 7-22. The quote is from p.15. This lecture is a wonderful summation of Hejduk's position about teaching architecture developed after 43 years of teaching.

<sup>9</sup> The Nine-Square Problem has been widely published. One of the early publications is in *Education of An Architect: A Point of View. An Exhibition by The Cooper Union School of Art and Architecture at The Museum of Modern Art*, New York City, November, 1971. (New York: The Cooper Union for the Advancement of Science and Art, 1971), 7-33.

<sup>10</sup> Rowe and Hejduk's careers intersected first at Texas. The sense of history that was latent in Hejduk's work such as the Texas Houses and student exercises such as the nine square problem show the influence of Rowe's historical constructs on Hejduk.

<sup>11</sup> Bart Goldhoorn, editor, *Schools of Architecture* (Rotterdam: Netherlands Architecture Institute, 1996), 15.

<sup>12</sup> Charles Burchard was a student of Walter Gropius at Harvard and collaborated closely with Olivio Ferrari at Virginia Tech. To paraphrase Frampton, Ferrari made the school under the leadership of Burchard. Charles Burchard received the AIA/ACSA Topaz Medallion for Excellence in Architectural Education in 1983. The successful and close collaboration of Burchard and Ferrari is a model worthy of further study in terms of the necessary collaboration between enlightened administration and pedagogical talent. This was evidenced in a series of articles they worked on together published in the late 60's and early 70's under Burchard's name. See, Charles Burchard, "A Curriculum Geared to the Times, *AIA Journal* (May 1967): 101-05 and Charles Burchard, 'The Next Horizon', *AIA Journal* (October 1973):46-7. The diagrams made by Ferrari distill almost an entire pedagogical position into the language of architecture and design.

<sup>13</sup> Personal Communication with Olivio Ferrari, undated. The ambiguity of this statement was characteristic of Prof. Ferrari. His original statement was —'You cannot teach anything without a philosophy.' Here the emphasis is on having a well developed position that serves as the foundation for one's teaching.

<sup>14</sup> Personal Communication with Prof. Olivio Ferrari, undated. Knowledge turned into belief becomes the basis for what one teaches.

<sup>15</sup> The extent to which he was able to successfully achieve this in his students and colleagues is demonstrated in, Ferrari: Portfolio (Blacksburg, Virginia: College of Architecture and Urban Studies, March 1996) with an introductory note by Professor Robert Dunay. This was a

publication of remembrances from his former students, colleagues and friends along with images of Ferrari's own work. For additional insight into Ferrari's thoughts on education see, Interview, Dr. Barbara Brown Schaer, 'The Ulmer Dialogue', Symposium Hfg, 25 Jahre Danach, Lehre, Ideologie, Folgen, November 12-14, 1993.

<sup>16</sup> The idea of intelligent interference should not be misconstrued. It simply stands for the active and continuous involvement of a teacher in the work and workings of a student.

<sup>18</sup> This highly personalized approach depended on establishing an educational intimacy. Here the initial reading the teacher makes of a students' interests, predispositions and innate capacities helps to fashion a unique teaching approach for each student as well as a communal dialogue that is bigger than the person.

<sup>17</sup> Ferrari and Rowe shared an awareness of the intersection of old and new worlds in America. For an interpretation of Colin Rowe's thoughts on this issue see the obituary cited above in endnote 6.

<sup>18</sup> These partial passages are quoted from, Kenneth Frampton, 'Nachruf: For Olivio Ferrari', *Werk Bauen+Wohnen*, nr.9 (9 September 1994); 78.

<sup>19</sup> Martin Heidegger, *Off the Beaten Track*, edited by Julian Young and Kenneth Haynes, (London: Cambridge University Press, 2002), 57-85. See in particular pages 64-5.

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