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The Lost Art of Teaching Ornament

El arte perdido de la enseñanza del ornamento

A arte perdida do ensino da ornamentação

Abstract | **Resumen** | **Resumo**

The teaching practices of premodernist architectural education have been lost, with a few exceptions. An example of this is the teaching of ornament. But by chance the author stumbled upon a handwritten notebook from 1905 by a long-forgotten Norwegian teacher at the old school of architecture in Oslo, the Christiania Drawing School. The ensuing investigation uncovered some lost facts about former North European architectural education: 1) Ornament made up 25% of the curriculum and of students' practical exercises. 2) Teaching of ornament had a threefold purpose: to teach drawing skills, to cultivate students' sense of beauty from day one, and to educate students in the history of architecture and architectural styles. The results presented here may be used in restoring the teaching of ornament as a discipline in schools of art, architecture, and craft.

Las prácticas docentes de la enseñanza de la arquitectura anterior al Movimiento Moderno se han perdido, salvo algunas excepciones. Un ejemplo de ello es la enseñanza del ornamento. Sin embargo, por casualidad, el autor encontró un cuaderno manuscrito de 1905, obra de un profesor noruego hace tiempo olvidado que impartía clases en la antigua escuela de arquitectura de Oslo, la Escuela de Dibujo de Christiania. La investigación posterior permitió recuperar algunos datos olvidados sobre la antigua enseñanza de la arquitectura en el norte de Europa: 1) El ornamento constituía el 25 % del programa de estudios y de los ejercicios prácticos de los alumnos; 2) Su enseñanza tenía un triple propósito: enseñar a dibujar, cultivar desde el primer día el sentido de la belleza de los alumnos y formarlos en la historia de la arquitectura y de los estilos arquitectónicos. Los resultados que aquí se presentan pueden contribuir a recuperar la enseñanza del ornamento como disciplina en las escuelas de arte, arquitectura y artesanía.

As práticas pedagógicas do ensino da arquitetura pré-modernista perderam-se, com algumas exceções. Um exemplo disso é o ensino da ornamentação. Porém, por acaso, o autor deparou-se com um caderno manuscrito de 1905, da autoria de um professor Norueguês há muito esquecido da antiga escola de arquitetura de Oslo, a Escola de Desenho de Christiania. A investigação que se seguiu revelou alguns factos que tinham sido perdidos sobre o antigo ensino da arquitetura no Norte da Europa: 1) A ornamentação representava 25% do currículo e dos exercícios práticos dos alunos. 2) O ensino da ornamentação tinha um triplo objetivo: ensinar competências de desenho, cultivar o sentido de beleza dos alunos desde o primeiro dia ,e formar os alunos na história da arquitetura e dos estilos arquitetónicos. Os resultados aqui apresentados podem ser utilizados para restabelecer o ensino da ornamentação como disciplina nas escolas de arte, arquitetura e artesanato.

Preamble

New traditional architecture involves learning from the past, yet the widespread destruction of educational materials[1] due to the modernist paradigm of *tabula rasa* for architecture and architectural education[2] has made this difficult. The chain of transmission of knowledge from teacher to student, prevalent in the tradition of the École des Beaux-Arts, is broken in traditional practice.3 Currently there is a multi-generation gap between the traditionally trained architect of the past and the contemporary student of architecture. Many primary sources recount how premodernist teachers' and students' work has been burned,[4] destroyed,[5] or lost.[6] This makes it hard to understand what the practical education of architects in premodernist Europe was like, especially in the North European tradition of the Bauakademie. The Christiania Drawing School was much influenced by that German tradition, as many Norwegian students of architecture and art studied in Berlin, Hannover, or Karlsruhe. In the other direction, German architects migrated to Norway in the nineteenth century to work and teach. German education was different to the French tradition, with a focus on classroom lectures, technical competence, and materials science. Premodernist teaching of ornament was no exception to this.

Surprisingly little is known about teaching methods in premodernist architecture schools. Although three excellent Norwegian PhD theses[7] have surveyed such schools from 1760 to 1910, their authors do not "enter" the nineteenth-century classroom, metaphorically speaking. Writings about education in premodern architecture schools typically take a distant view of teaching practice, giving the impression that the premodernist mindset may be incomprehensible to us today. Architectural historians typically have a fine-arts perspective and focus on the most prominent architects and architectural theorists, relating their discussions and disagreements. This leaves us with many questions: What work did students do in the classroom and at home? What expectations did their teachers have of them? Which books did they read and what use was made of the international literature, including collections of plates? Historical research gives us little insight into the nitty-gritty of premodernist pedagogy.

Although it is impossible to travel in time and experience the world as it was then, we can reconstruct it. After a search for drawings and examples of what it was like to be a student of art or architecture in Oslo before 1910, in 2024 some fortuitous events opened a new research path.

Four Recent Discoveries

By pure chance the author stumbled upon fragments of a student's lecture notes in a small Norwegian museum[8]. The last page was inscribed: "Kristiania 1909. After Lectures by Aa Stray." The teacher and student are long forgotten. Aasmund Stray (1860–1924) was an artist rather than an architect and served as principal teacher in elementary ornamentation classes from 1899 to 1924.[9] The notes found in the museum, in Telemark, were those of Ragnvald Kittilsen (1885–1911).

Fortuitously, another Aasmund Stray manuscript, *Lectures on Elementary Ornament*, was referred to by Mathilde Sprovin in her PhD thesis. And the author was notified of a further discovery of drawings by a female architecture student at the Christiania Drawing School, Jacobine Marie Selmer (1878–1953). These drawings from her time at the school, both coursework stamped in approval and casual sketches, give us an insight into what it was like to study architecture in Norway 120 years ago—what courses were followed and what students learned and did as assignments. By mapping Marie Selmer's drawings into a timeline we may get an idea of the pace of classwork, though questions remain about how the course was organized, how much was done at school and how much as homework, and how the teacher and students interacted. And after the author presented these findings at the conference Beauty and Ugliness in Architecture 2025, an attendee—Liv Rehn Berger, a lively 91-year-old lady from Raufoss—supplied further material from her MA thesis in Art History.

Samples of written and drawn material by Marie Selmer, Ragnvald Kittilsen, and Aasmund Stray are shown in figure 1.



Figure 1

Top left: Plate dated 12 November 1902 from the Marie Selmer collection (Øystein H. Nilsen & Simen D. Taraldsen).

Top right: Drawings from the sketchbook of Hakon Hansen, school year 1903–1904, page 35.

Bottom left: Page 3 of Aasmund Stray's lecture on Elementary Ornament (1904–1905).

Bottom right: first page of Ragnvald Kittilsen's lecture notes on Elementary Ornament, from 1909 (Mariken Eek, Telemark Museum).

In Christiania (now Oslo) the subject of ornament was considered important already at the inception of architectural and artistic education in 1818, and more so from the late 1890s to the 1920s. Mathilde Sprovin thoroughly documents the role of ornament in her thesis through administrative sources: reports, regulations, annual reports, etc. (Sprovin 2017: 82). Some 20% of the school's teaching was devoted to aspects of ornamentation, though with an apparent pause in organized teaching from 1869 to 1884. Another surprising source emerged in January 2024: a collection of Jacobine Marie Selmer's work as a student at the same drawing school—primarily drawings from 1901 to 1904.

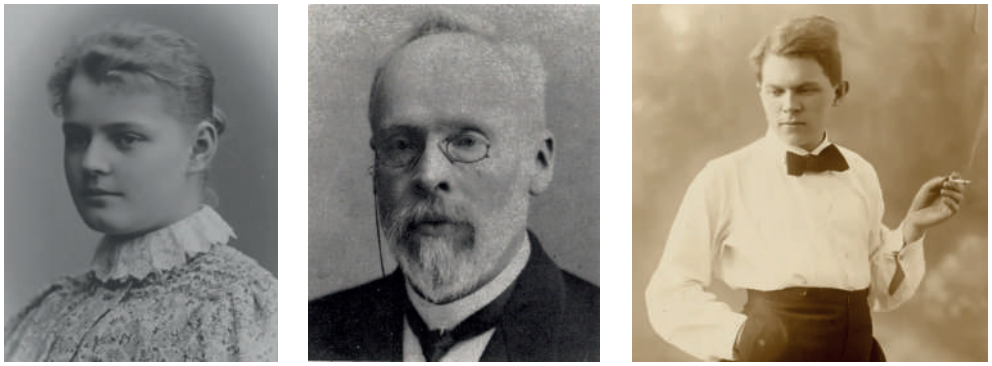


Figure 2

Left: Jacobine Marie Selmer, before entering the school in 1900 (Jacob M. G. Aune)

Middle: Aasmund Stray, probably between 1905 and 1910 (Unknown).

Right: The only known photo of the short-lived student Ragnvald Kittilsen, taken between 1907 and 1911 (Unknown).

There is no known photo of Haken Hansen.

Ornaments in the Marie Selmer collection make up over 30% of her drawings for all subjects. The collection gives us an insight into what the students produced and how significant ornamentation was in that. By reverse-engineering, we may reconstruct what was taught in the classroom and how it was taught.

Aasmund Stray was aware of the best international literature on ornament and decoration: sourcebooks on practical drawing skills (Meyer 1886 and Crane 1900),[10] style and ornament,[11] and classical architecture (Bühlmann 1913 and Durm 1881), and surveys of the history of fine arts and vernacular crafts (Nicolaisen 1881–1891 and Rygh 1885). He was careful to give credit to most artists and authors and his lecture notes are a window into a vast knowledge base of sources now forgotten. Many of these old books have recently been digitized, so we can recreate the library available when the lectures were written. See examples in figure 3: sourcebooks prior to 1850; and figure 4: sourcebooks published after 1850.



Figure 3. Sample of plates from the early works on ornament available at the drawing school in the 1830s and '40s. From left to right, top row and then bottom row:

1) Giocondo Albertolli (1782), plate V: 13;

2) Wilhelm Zahn (1829): 85;

3) Carl Bötticher (1836), plate 4: 13;

4) Louis Zoellner (1839), plate 42: 91;

5) Hessemer (1842), plate 38, 117;

6) Owen Jones (1844), plate XXXVII: 251.

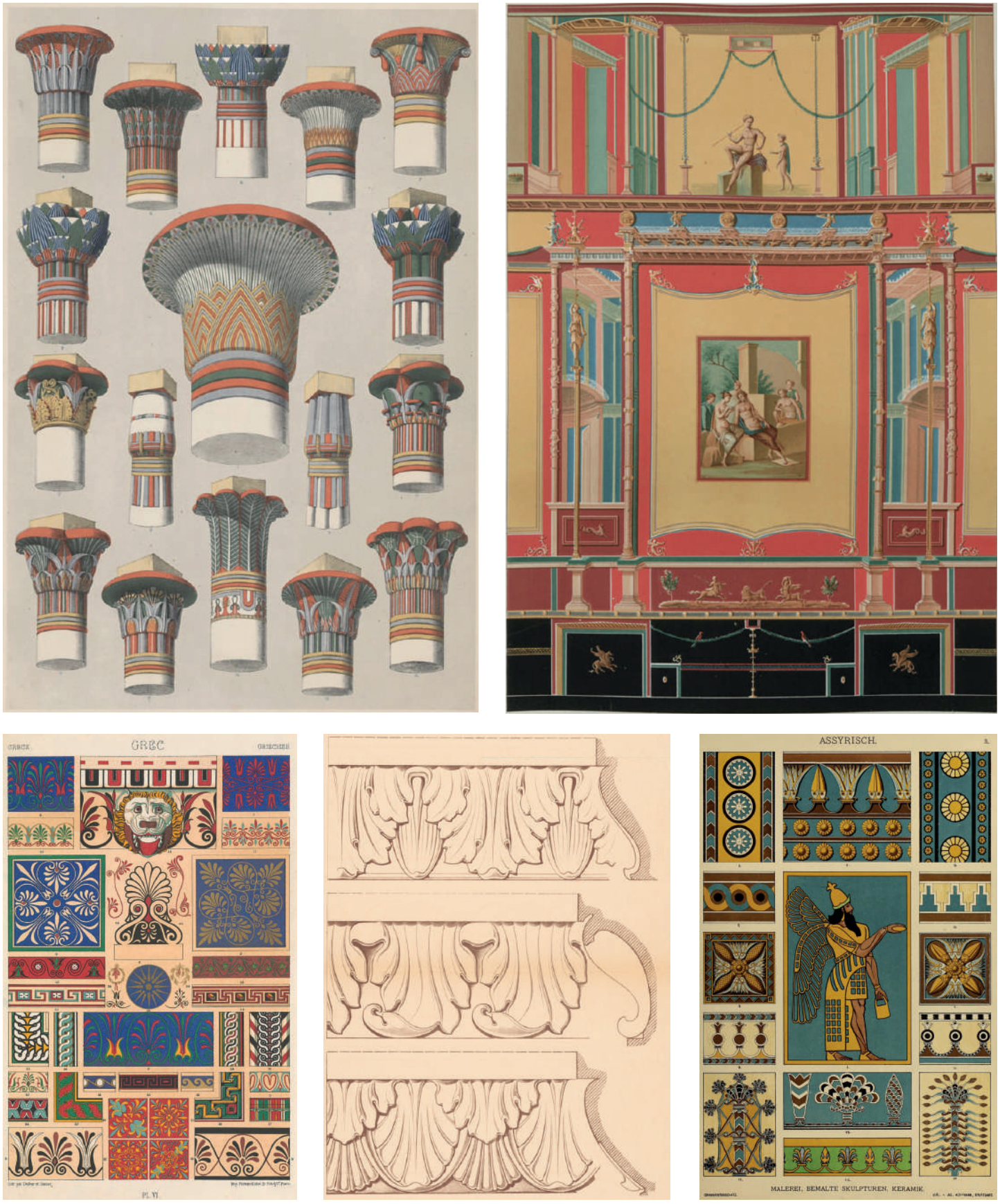


Figure 4. Sample of plates from works on ornament published after 1850 and available at the school, frequently referred to by Stray in his lecture notes or by his Christiania students between 1901 and 1909. From left to right, top row and then bottom row: 1) Owen Jones (1856); 2) Fausto and Felice Niccolini (1854–1896); 3) Auguste Racinet (1869–1876); 4) Johann Eduard Jacobsthal (1874); 5) Heinrich Dolmetsch (1887).

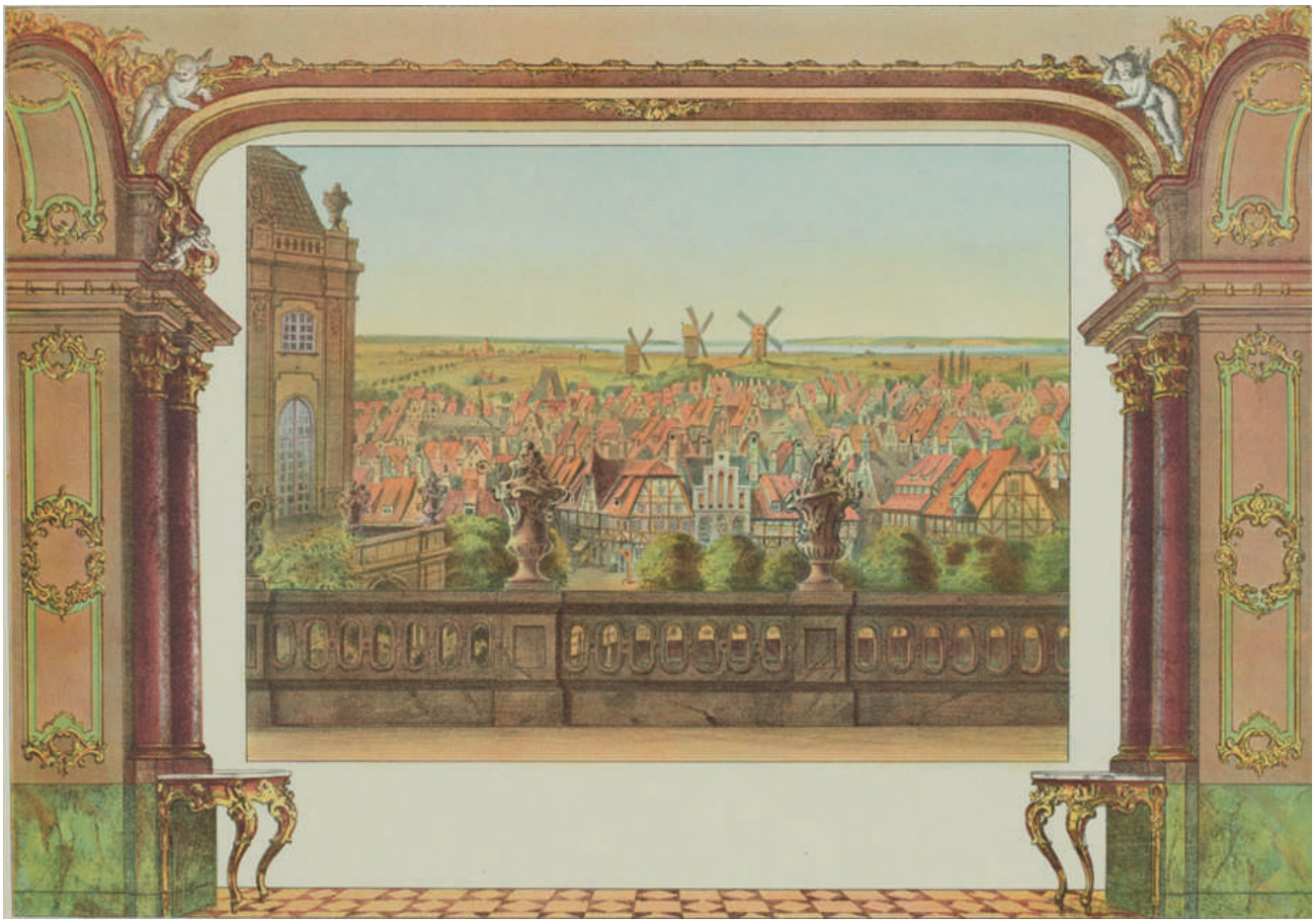


Figure 5. Stray trained and worked as a decorative painter, which included set design for puppet and paper theaters. This drawing probably from 1906 was produced for the Danish lithographer Alfred Jacobsen: "Hall in Rococo style. Middle curtain. View of an old town with mills. Set piece." (Royal Danish Library).

Thus four main sources are used here to shed light on Stray's teaching practices: his own lecture notes, the fine drawings of his student Marie Selmer, Ragnvald Kittilsen's carefully written notebook, and the literature on ornament and decoration available at the school between 1818 and 1910.

Importance of Ornament in Education

Ornament played a threefold role in premodernist art and architectural education: improving students' drawing skills, cultivating an appreciation of beauty from the start of their studies, and introducing them to style and history.

1. Drawing ornaments greatly developed draftsmanship skills. Easily drawn ornaments were covered in elementary classes, followed by more advanced subjects.[12] Ornament was an integral part of preparatory education at the drawing school from at least 1844,[13] with an emphasis on freehand drawing and simple downscaled elements.

2. Teaching of ornament was the simplest way to introduce students to beauty, which they were encouraged to become familiar with through observation and drawing.[14] Beauty was mastered not by designing classical palaces but on a small scale, through drawing basic ornaments and then more complex ones as skills were honed. In Oslo several students, particularly female ones, took classes in ornament continuously up to their graduation.

3. The courses gave students insights into cultural history and ornamental styles. Late nineteenth-century lectures and sourcebooks explored Egyptian, Moorish, Arabian, Japanese, Chinese, and Indian styles of decoration as well as the Greco-Roman tradition. Books of the time typically contained introductions to style and expositions of art history. More comprehensive ones also

surveyed the medieval, Renaissance, and Baroque styles as manifested in different European traditions.[15] In the 1880s there were no courses explicitly on architectural history, as Norwegian schools of architecture integrated this into practical design and drawing courses, most notably on ornament.

A look at the teaching material used in the Christiania Drawing School library shows that as much as 27% of the collections of plates registered between 1719 and 1908[16] were devoted to ornament, decoration, and general figuration (natural ornaments). In the catalog of drawings by Marie Selmer, ornamental design accounts for 33% of her output at the school from 1901 to 1904,[17] increasing to almost 60% in her final year.

An example of the significance of ornament in the school's courses around 1900 is Marie Selmer's five first drawings stamped in approval from the preparatory course for all students: "Freehand class I," spring 1901 (Fig. 6).



Figure 6. Selmer's first work stamped in approval, winter and spring 1901:

Top left: Her first drawing at the school, dated January 25.

Top center: Fragments of spirals and curved ornaments, dated February 5.

Top right: Greek panel in a coffer of the Propylaea ceiling by the Acropolis, dated March 23, 1901.

Bottom right: Greek spiral wave ornament dated February 15.

Bottom left: Greek anthemion band dated February 26.

Aasmund Stray's Lecture Notes

Aasmund Stray was firmly rooted in a North European, Danish/German educational tradition through his early training in Norway and his advanced studies in Denmark and later Austria. Formal courses typically involved weekly lectures to a large class along with practical exercises supervised individually. Stray's lecture notes include 79 pages of explanatory text with 310 drawings, in two parts: a toolbox of basic concepts, exercises, and insights, and subsequently more advanced subjects, exploring styles and periods by culture.

Initially, Stray taught the first part of Elementary Ornament using colors, as seen in Marie Selmer's exercises stamped in approval from autumn 1902 (Fig. 8). But after reorganizing the course for the academic year 1904–05, he left colors for the more advanced second part, except for one lecture on color theory (Fig. 9).

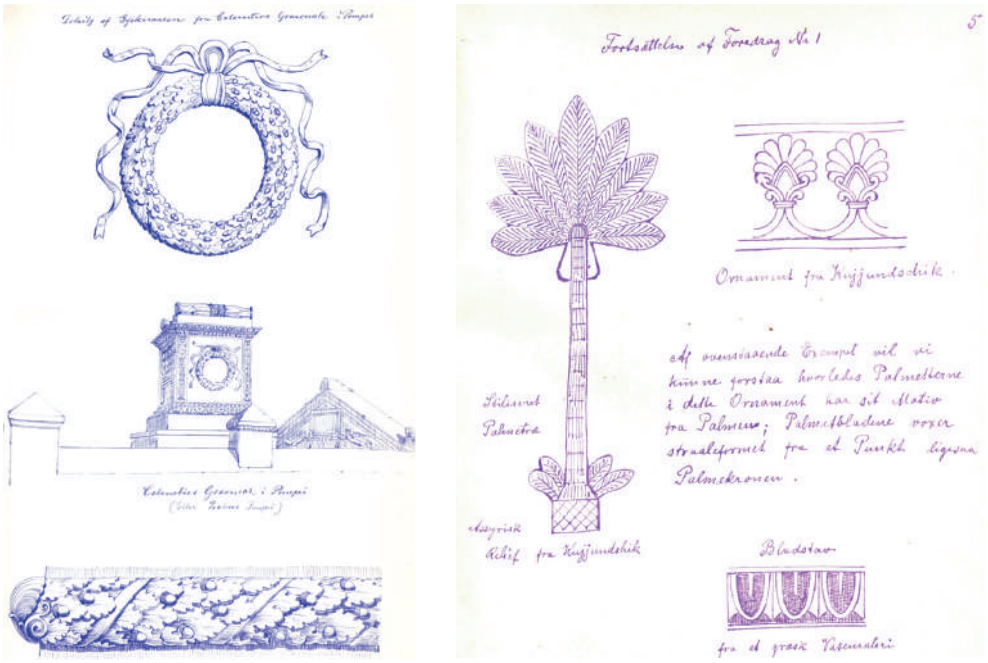


Figure 7. Drawings for the first Elementary Ornament lecture.

Left: Plate from page 66 showing a detail of an oak wreath from the tomb of Calventius in Pompeii (centre) and a sculpted round column from the Temple of Jupiter Tonans in Rome.

Right: Stylized Assyrian palm tree, ornaments from Kujjundschik, and Greek ornament with stylized leaves.



Figure 8. Polychrome ornaments by Marie Selmer, autumn 1902, prior to Stray reorganizing the course.

Left: Coffered ceiling panel from the Propylaea in Athens.

Right: Final drawing with Stray's approval stamp from autumn 1902, dated December 8, 1902.

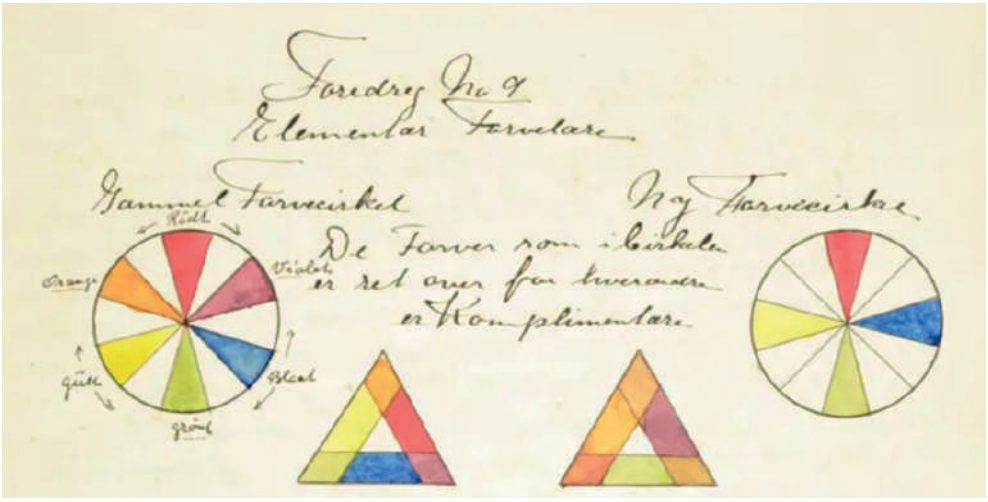


Figure 9 Colors were permitted in the first part of Elementary Ornament only in lecture 9, Elementary Theory of Colors. Sheet from Ragnvald Kittilsen's notebook.

The first part contains ten numbered lectures. In Table 1 we have added subtitles in italics according to the subject.

First part	Lecture content
Lecture 1: *Rationale and overview*	Stray accounts for the importance of ornaments with reference to nature and history as sources of inspiration. Simple and intermediate compositions from ancient Egyptian and Assyrian decorative design are introduced.
Lecture 2: *Curved lines and circles*	Stray presents basic curved molding profiles and easily drawn band ornaments. The lecture ends with ancient Scandinavian bronze ornamentation, mostly from Iron Age bands.
Lecture 3: *Skeleton of ornament*	The concept of a skeleton in ornamentation is expounded with reference to nature: a skeleton is a trunk or stem as of a tree or plant. The Athenian Monument of Lysicrates is used for illustration.
Lecture 4: *Ornaments deployed on objects*	Ornaments are employed in such everyday objects as furniture, door handles, vases, cutlery, or candelabra. Stray notes that motifs should be suited to the characteristic form of objects and designed not to snag clothes with large protrusions.
Lecture 5: *Proportion and taste*	An extensive lecture full of examples of good and bad taste, pointing to good and bad proportions in objects and ending with a focus on Greco-Roman ceiling ornamentation.
Lecture 6: *Enclosed ornaments*	Stray sets out three principles of enclosed or bounded ornaments: centered around one line, structured over several lines, or designed over a freely curving line. This is illustrated with drawings of intricate medieval Scandinavian bronze ornamentation.
Lecture 7: *Band ornaments*	Stray describes friezes and borders as belts or bands that may be continued indefinitely, presenting seven design options along with the example of a Scandinavian baptismal font in Roman style.
Lecture 8: *Unenclosed ornaments*	Patterns are presented as ornaments potentially infinite in every direction. Unenclosed ornament might contain repetitions of enclosed ornament, with or without growth, organized linearly (vertically and horizontally) or obliquely. The illustrations borrow from Walter Crane's *Line and Form* (1900).
Lecture 9: *Color*	Color is presented through the old and new color circles, with monochrome drawings. Stray says coloring should enhance ornamentation and that one must study historical examples of color in decoration and nature.
Lecture 10: *Composition*	This lecture contains no drawings, probably because it is too specific for any choice of examples. There is a broad practical exercise in which students are to create their own complex drawing. Stray says the designer should consider the various observer distances and strive to draw in a single plane.

Table 1. Structure of the first part of Elementary Ornament

The first lecture gives a thorough account of the importance of domestic ornament, highlighting nature and history as the main sources for the ornamentist: "Since the Art of Ornament has been exercised by many different people at different times and under varying conditions, and since ornamental motifs are taken from Nature and built over the Principles of Nature, then there are two sources that we should use for our study, namely History and Nature; we must study the Book of History and the Book of Nature. It is therefore necessary to familiarize ourselves with what has been handed down in previous Ornaments, including Form, Color and Content, as well as technical execution, at the same time as we study Nature for an Understanding of Precedent and as a source of renewal."18 After his introductory rationale, Stray develops the basic toolbox of design concepts for ornamentation; the notions of "repetition," "variation," and "contrast," giving first simple drawn examples (Fig. 7, left), and then stylized examples from ancient Egyptian and Assyrian precedent (Fig. 7, right).

Second part of Elementary Ornament

The remaining lecture notes are devoted to eight topics explored in more depth. This part is called "Natural Forms and their Decorative and Ornamental Application". Here there is no obvious division into lectures but rather an exploration and exposition of broader topics, with numerous drawings.

One drawing stamped in approval in the sketchbook of the student Hakon Hansen from spring 1904 shows the standard of polychrome compositions that students were able to copy and design (Fig. 12). Some of the topics Stray covers in the second part include content that probably spanned several lectures, like a mini-course lasting weeks. Outlines of the topics in the advanced part of the course are given in Table 2.

Second part	Lecture content
Egyptian style	Stray discusses ancient Egypt and its dynasties, highlighting its cultural contributions through large-scale drawings of ornamental compositions, capitals at Luxor, and band ornaments of stylized flowers.
Assyrian style	After a description of ancient Mesopotamian civilization, comparing Assyrian and Egyptian culture with reference to anatomical depiction and use of color, there are three pages of plates with complex Assyrian ornaments of ribbon windings, carpet-like doorsteps, and lion friezes from Susa and Nimrud.
Mycenaean style	Stray presents this precursor to ancient Greek art and architecture with reference to the works of the historians J. M. Secher and H. Schliemann, explaining how tribal movements in the first millennium B.C. gave rise to the Dorian and Ionian orders and offering seven examples of ornament from Mycenaean pottery.
Greek style and ornament	Greek style is a major topic, including many drawings with meander ornaments typical of nineteenth-century sourcebooks, a collection of Greek ribbon windings and wave patterns, and several advanced antefixes and sima designs.
Rosettes & natural forms	This section is confined to comments on drawings by Stray executed in the style of the contemporary sourcebooks on ornament, with detailed naturalistic representations of laurel, oak, vine shoots, and olive branches, and illustrating the use of stylized plant motifs in Greco-Roman decorative art such as in column bases, posts, vases, candelabra, or wreaths.
Moldings (ancient)	Stray surveys various styles of moldings, depicting simple cyma designs as well as Greek ones, with examples of Doric and Ionic ante-capitals of increasing complexity.
Acanthus	This section focuses on the acanthus leaf and its historical embellishing role in Greek art and architecture and thereafter, describing its form and use in decorative art. Naturalistic depictions of the plant and guidelines for the novice drawer are followed by four beautiful stylized acanthus ornaments.
Humans, animals, fantastic creatures	Stray discusses the use of human figures, animals, and fantastic creatures in ancient Greek art, with a focus on the associations and mythological connotations of species such as the lion and eagle before looking at fantastic beasts such as the Egyptian sphinx or the Greek griffin and centaur. He ends with drawings of the terracotta lion's head at Metaponto, a bronze candelabra with animal legs, and two chimeric winged lions and a lyre.

Table 2: Structure of the second part of Elementary Ornament

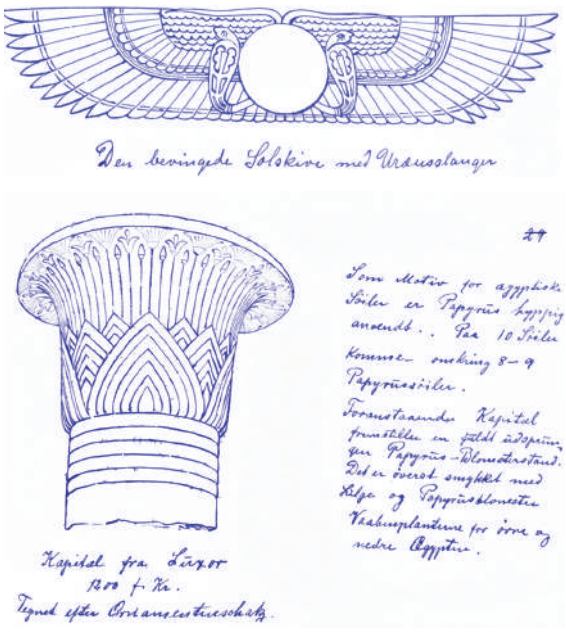




Figure 10

Bottom left: Aa. Stray: text reads "Capital from Luxor 1200 before Christ. Drawn after Ornamentenschatz. Papyrus is often used as a motif for Egyptian pilasters. Of 10 pilasters, there are 8-9 with papyrus motifs. The capital presented depicts a blossoming papyrus flower. The upper part is embellished with lilies and papyrus flowers." Elementary Ornament, page 38.

Top Left: Aa. Stray: "The winged sun disk with the Uræus snake," Elementary Ornament, page 41.

Right: From Dolmetsch Ornamentenschatz, Plate 2, Aegyptish Architektur und Malerei, page 16. Figure 2 in Plate 2 clearly inspired Stray in his rendering of "Hauptgesims am grossen Tempel zu Philä. Skulptur und Malerei."

Thus the second lecture sequence examines ancient Egyptian history (Fig. 10) and ornament, surveys Assyrian and Mycenaean decoration, and delves into Greek style and ornamentation (Fig. 11) as well as cornices and other building ornaments, with detailed monochrome drawings copied from the foremost ornamental sourcebooks (Fig. 10).

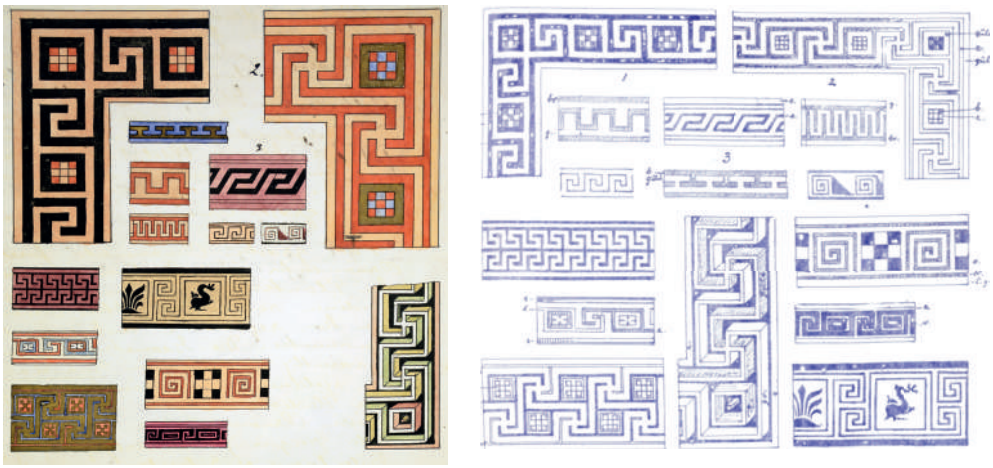


Figure 11. The second part of Elementary Ornament explored ancient styles with examples.

Left: Greek meanders. Ragnvald Kittilsen made his own plate in his notebook, recreating and reorganizing Stray's version, page 33.

Right: Stray's notes from 1905, page 53.

Concluding Remarks

The teaching of ornament is today a lost practice, like so many other premodernist aspects of architectural education. Lectures on its importance by academics and practicing architects have shown great historical knowledge of architecture but not addressed the role of ornament in past architectural teaching practice. We hope this paper may assist in filling the gap, although our case study focuses only on Norwegian teaching practices, rooted in a Danish-German tradition. We hope other architecture historians may explore the pedagogy of ornament in their own countries, where there are relevant sources in public or private archives. Other fields of architecture in which knowledge about past teaching methods is lost could also benefit from research, including traditional building and furniture design.

One reason that the teaching of ornament went out of fashion is modernist ideology.[19] In Norway, tradition, history, and beauty were gradually displaced by the rise of modernism, and the art of teaching was also slowly lost as the last drawing school teachers disappeared or moved on. What was lost was not just the skills concerning how to best teach and learn the craft but also the rationale. The contrast with other aesthetic fields, such as education in performing arts like music and ballet or in visual arts like sculpture and painting, is striking. Architecture was integrated into visual arts education, and craft students also shared in arts courses. Craftsmen and women were the largest group when the drawing school was established and remained a large part of its student body until its closure in 1910. So in Christiania, students of craft and architecture shared the same teachers between 1818 and 1910, and in a potential revival of the teaching of ornament might do so again.

The author would like to acknowledge the following individuals and institutions for their invaluable assistance in providing sources and offering feedback on this paper: the National Archives and the Regional State Archive of Oslo, particularly Jolanta Akre; NTNU PhD students Øystein Nilsen Holdø and Simen Dalen Taraldsen; NTNU Associate Professor Emerita Eileen Garman Johnsen; Telemark Museum, particularly Charlotte Andersen and Mariken Eek; Geir Tandberg Steigan; architect and teacher Pablo Alvares Funes; Assistant Professor Brandon Ro; Freunde der Puppentheatersammlung Dresden, particularly Lars Rebehn, Oberkonservator at the Staatliche Kunstsammlungen Dresden; architectural historian Mathilde Sprovin; Professor James Stevens Curl; Anne Gaaserud of Kuben Museum (Arendal); Michelle Sofge, editor of The Classic Planning Herald*; Elisabeth Seip, Professor Emerita at AHO; and Christiane Salge, Professor of Architectural History at the University of Darmstadt.*

[1] A good online overview is provided by Hanssen (2024).

[2] James Stevens Curl has documented the failure of modernist architecture and architectural education in *Making Dystopia: The Strange Rise and Survival of Architectural Barbarism* (Curl 2019) and the article "In Architecture, Hold Fast to History" (Curl 2015).

[3] Among many articles and books on pedagogy at the École des Beaux-Arts, Madlen Simon examines the transfer of French teaching principles to American schools of architecture in "Professional Education in the Beaux-Arts Atelier" (Simon 2002), while Alexander Griffin's *The Rise of Academic Architectural Education: The Origins and Enduring Influence of the Académie d'Architecture* (2020) examines, among other aspects, the relationship between students and teachers. One of the earliest and most authoritative sources is John F. Harbeson's *The Study of Architectural Design: With Special Reference to the Program of the Beaux-Arts Institute of Design* (1926).

[4] The modernist book-burnings of premodern literature and drawings are poorly documented, probably due to the associations of book-burning after the Second World War, when the Nazi bonfires of the 1930s and '40s were fresh in people's memory. The quiet disappearance of books and teaching materials from the past avoided provoking those interested in history. In Oslo there was a discreet book-burning in 1948, when many of the old premodernist teaching resources, including sourcebooks, teachers' lecture notes, student work, and collections of architectural plates, vanished. This took place in the yard of the Norwegian National School of Art and Design (SHKS) and was overseen by the school janitor, although the materials to be burned must have been chosen by faculty members. The art historian Truls Aslaksby learned of this Oslo book-burning incident from first-hand witnesses.

[5] In Spain, huge amounts of educational material in architecture, including student drawings and teaching books, were destroyed during the Civil War, according to Pablo Alvares Funes. Almost all student work from between 1848 and 1936 was destroyed in fires following the bombing of the main school, and also due to soldiers burning student work to keep warm in the cold winter of 1936. German schools of architecture suffered even more in the Second World War. Many school buildings were destroyed in bombing raids, including the Berlin Bauakademie. Huge amounts of teaching material went up in smoke.

[6] Professor Emeritus Elisabeth Seip, the pioneering founder of the Norwegian Architecture Museum (1975–1980), described in a phone call with the author on September 8, 2025 how carelessly source material was handled after 1945. Up to 1975, some drawings, notes and models were saved by a few dedicated individuals, such as Harald Hals, but previously there was no system in place to protect significant older material.

[7] Elisabeth Seip, Mathilde Sprovin, and Bente Aass Solbakken have all written PhD theses on historical architectural education. Professor Seip originated research into early Norwegian architectural education at the Kristiania Drawing School with her thesis of 2007 on the background to its foundation in 1818.

[8] Telemark Museum digital library: Kittilsen's notebook. In October the rest of the book was digitized by Mariken Eek, allowing the author to transcribe the handwritten notes.

[9] Mathilde Sprovin mentions the lecture book in her PhD thesis, which also includes a photo of Stray's acanthus drawings (Sprovin 2017: 137).

[10] Meyer's book *Die Liebhaberkünste* (1890) was available in Norwegian translation as early as 1892.

[11] The sourcebook most frequently referred to by Stray, in addition to that of Franz Sales Meyer and of the authors mentioned in figure 4, was Wilhelm Zahn's *Die schönsten Ornamente und merkwürdigsten Gemälde aus Pompeji, Herculaneum und Stabiae: nebst einigen Grundrissen und Ansichten nach den an Ort und Stelle gemachten Originalzeichnungen*, vol. 1 (1828–1829).

[12] Ornamental design in the elementary stage comprised 25% of Marie Selmer's catalog, and five out of the 19 drawings in Elementary Class B were ornaments—her first drawing exercises at the school.

[13] In Hetsch's 1844 book the first elementary drawing courses included basic fret ornaments. In Elementary Class B in 1901, the first five drawings by Selmer were all exercises in ornament, i.e., about a quarter of the preparatory course.

[14] Stray comments on beauty and how ornaments can beautify an object, such as at the start of lecture 1: "[…] the important Role that Ornament plays in daily life, by beautifying and refining ordinary utilitarian objects and our buildings and homes, makes it necessary for pupils to thoroughly familiarize themselves with how it is created, executed, and applied […]"

[15] In the first lecture students are presented with practical examples of ornament from the Scandinavian Iron Age along with ancient Egyptian, Assyrian, and Greek ornaments.

[16] The collection of sourcebooks containing drawing plates is meticulously catalogued by Mathilde Sprovin in her thesis (2017: 291–305).

[17] Marie Selmer's drawings of ornamentation over her time at the school account for varying proportions of the total: First year 26%, second year 11%, third year 47%, final year 59%.

[18] Stray (1905), Lecture 1, page 1, and Kittilsen (1909), Lecture 1, page 1.

[19] Adolf Loos: *Ornament und Verbrechen* is the most famous critique of ornamentation, written in 1908 and delivered as a lecture in 1910.

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Biography | Biografía | Biografia

Anders Moen Hagalisletto

Anders Hagalisletto is a Norwegian research scientist, entrepreneur, and computer scientist with MAs in philosophy and theoretical computer science and a PhD in cybersecurity from the University of Oslo (2007). He established the Beauty and Ugliness Conference in Oslo and has organized it since 2023 in order to share with the International Architecture Uprising community and modern architects the proven benefits of traditional architecture, including its premodernist educational foundations. While reconstructing lost or forgotten teaching practices in architecture, he came across rich materials on formal education in the field of ornament in Norway before 1910. Since 2022, Hagalisletto has published articles on urban development, aesthetics, high-rise buildings, and architectural history, mainly in Norwegian journals.