A Historical Perspective of Architecture Education at Waseda University in Japan: Analyses of the Waseda Architecture Lecture Notes for Correspondence Education in the early Shōwa period

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ABSTRACT
The dawn of modern architecture education in Japan came as the Meiji Administration established public universities and technical training schools. During the the end of the Taishō period (1912–1926) to the Shōwa period (1926–1989), with rapid social modernization, construction technologies also needed to be modernized. In the private education sector, Waseda University, the pioneer in individualized architecture education, introduced and implemented a special education system called correspondence education (a form of distance learning) in the early Shōwa period to serve the society’s demand for architectural professionals and technicians. The Waseda Architecture Lecture Notes, used as course materials for correspondence education, play a vital role in understanding Japanese architectural education’s founding period. This paper focuses on current storage locations, publication time frames, educational background of the lecturers, proportional arrangements of the various subjects, as well as the design and characteristics of lecture syllabi of the Waseda Architecture Lecture notes. This analysis reveals that the Waseda Architecture Lecture Notes had specifically emphasized on architectonics courses. Therefore, Waseda University made significant contributions to the national reserve and the cultivation of architectural specialists through the distance learning approach tailored to the historical context of the Shōwa period.

1. Introduction
1.1. Research background
Architecture is a representation of its community and offers living space for its members, where a community could refer to a nation, an ethnicity, or a society. Architecture is also a product of the compound of different complex technologies and techniques. Therefore, architectural education is essential to understanding the subject of Architecture. Architectural education also has a particularly wide range of basic learning blocks in terms of specializations, including not only the technologies but also the cultural wisdom and sociality that humans have built up over the past.

During Japan’s opening of its country and economy to the outside world in the Meiji period (1868–1912), western technology was introduced, and Japan’s
modernization began (Watanabe 1991). The Meiji government established the Imperial College of Engineering (later the University of Tokyo) to train human resources for national architecture and urban design with a focus on Western eclectic architecture. The Japanese architecture of this period was designed by foreigners and built by Japanese carpenters using traditional Japanese techniques. As modernization progressed, the need for technology for housing and construction companies became more widespread. At the time, there was also an urgent need for architectural technicians to support the construction industry. It is obvious that the university education of the University of Tokyo alone is not enough. Therefore, institutions such as the Tokyo Workers’ School (later Tokyo Institute of Technology) were established from the latter half of the Meiji period to educate human resources on the lower structure. The period from the end of the Taishō period (1912–1926) to the Shōwa period (1926–1989) was when imported technologies and labor were replaced by self-sustaining ones, and these technologies were spread through books or textbooks (Kakuta 2016). In other words, this period corresponded to the period when the initiative shifted from hiring foreigners to using Japan’s own researchers and engineers. Furthermore, economic development in this period led to the establishment of engineering education.

Also in response to this need, Waseda University (which could be referred to Figure 1) founded the Waseda Technical School (a form of evening school) and introduced a remote learning program called correspondence education, which together with Waseda Technical School, catered to the specific demand for professional technicians, as the contemporary architecture technologies relied significantly on the auxiliary support (NAITō tachū 1929b). The correspondence education had been a significant complement to the traditional educational approaches. Using the Waseda Lecture Notes as textbooks and course materials, the educational institution served all kinds of people who lacked the time or economic resources to go to school or lived in remote areas. Its mission also went beyond traditional educational purposes. While the institution still furnished its students with technical skills, it also strived to promote public awareness and understanding of architecture expertise and cultivate public interest in general and specific architecture areas within architecture. Its primary medium, the Waseda Architecture Lecture Notes, was written, compiled and edited by teachers in Department of Architecture, Waseda University, and published by Waseda University Press. This whole education system was called Off-Campus Education, and those who purchased these lecture notes became Off-Campus Students.

1. Research purpose and significance

Most studies of modern architectural education in Japan have focused on university education, but university education at that time was basically in the form of lectures, and there are no systematic textbooks left. Thus it is difficult to understand exactly what was taught at that time. However, as discussed in the previous section, there was another form of architectural remote education called correspondence education in the Shōwa period to meet the needs of society, and the aspect of most importance is that correspondence education had its own unique textbooks – Lecture Notes. Even though many of the Lecture Notes of this founding period of architectural education were

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1Eclecticism is an architectural style that flourished in the 19th and 20th-centuries. It refers to any design that incorporates elements of traditional motifs and styles, decorative aesthetics and ornaments, structural features, and so on, that originated from other cultures or architectural periods.
scattered or lost, fortunately, the authors noticed that some of the Lecture Notes used in the correspondence education still remained in the libraries at Waseda University Department of Architectural History. The authors then took this opportunity to collect and organize the lecture notes, which offered us valuable insights into restoring the actual situation of architectural education at Waseda University in the early Shōwa period. The correspondence education lecture notes could also help us clarify the technical level in the correspondence education courses at Waseda University, and could reveal the quality of engineers that were required at that time. Finally, this research could reach a consensus on the actual disposition of how architectural education from the end of the Taishō period (1912–1926) to the Shōwa period (1926–1989) responded to the progression of the needs of society, how educational purposes were divided between public and private sectors of architectural education, or how education subjects were split.

1.3. Review of previous literature

As a renowned, comprehensive review of modern Japanese architecture history, the Modern Japanese Architecture Development History published by Japan Architectural Review is a cornerstone work for research on modern architecture education in Japan. It summarized the education systems of major universities, including the University of Tokyo, Waseda University, Kyoto University, etc. It offered an evolving roster of professors and lecturers in the third section of Chapter 11. It also went on to discuss the variations in specialized subjects, in terms of contents and schedules in the fourth section (Japan Architectural Review 1972). However, the introductory nature of this encyclopaedic work limited its scholarship in traditional educational institutions such as Waseda University Department of Architecture, without extending to the technical schools and the correspondence education systems.

More relevant research can be found in Nakajima Hisao’s publication (Nakajima 1987). He mentioned that Japanese architects’ compilation in Japanese architecture originated in the early Meiji Period, when Japanese architects started to translate European and American architectural publications into Japanese. After Meiji 20th (1887), Japanese architects began to compile and edit lecture notes on architecture for publication. Table 1 briefly summarizes the lecture notes published and issued during the Taishō period and the early Shōwa period, among which the Waseda Architecture Lecture Notes were a set of comprehensive, well-organized lecture notes written and edited by professors from Waseda University.

Ikuo Hirayama shed additional light on the Meiji 27th Taki Daikichi Architecture Lecture Notes mentioned in Hisao Nakajima’s publications. He analyzed Daikichi Taki’s activities in Osaka and studied various aspects of the lecture notes used in the technical evening schools, including course schedules, contents of the lecture notes, and the publishing process of the separated and combined volumes (Hirayama 2018).

There is also a previous publication specifically dedicated to the architecture education of Waseda University. In the magazine, Takahide Horii presented the two education systems available during the early establishment of the Waseda University (Horii, Motohashi, and Nakatani 2013). However, as Horii’s research focused more on the education outlook of renowned professors including Professor Kōichi Satō and Professor Tachū Naitō, it only briefly summarized the two education systems without a detailed analysis into the specific institutional arrangements of each education system, such as course schedules and textbook contents.

Additionally, valuable information on correspondence education of Waseda University can also be found from Waseda University Archives of Nao Hiroki. 2016 Spring Exhibition of Waseda University presented ample details of the origins, development, and finale of correspondence education in the university. It also exhibited the profiles of some graduates of the correspondence education at Waseda University who went on to become professors and social celebrities (Horii, Motohashi, and Nakatani 2013). However, it did not provide more than an introduction of the contents of the correspondence education itself.

This article will focus specifically on the Waseda Architecture Lecture Notes used in the correspondence

| Table 1. Lecture notes published during Taishō period and early Shōwa period. |
| --- |
| Period | Lecture Notes | Author |
| Taishō 23th | Japan Industrial Technology Societies Architecture Lecture Notes | Tokyo Institute of Technology |
| Taishō 11th | Imperial Industrial Education Association Architecture Lecture Notes | Waseda University |
| Taishō 13th | Architecture World Press Architecture Lecture Notes | Unknown |
| Taishō 15th | Arusu Architecture Lecture | Unknown |
| | Architecture Materials | Unknown |
| Shōwa 4th | Waseda Architecture Lecture Notes | Professors at Waseda University |
| Shōwa 7th | Higher Architecture | Famous researchers |
| | Practical Architecture Lecture | Unknown |
| Shōwa 12th | Architectural Design Data Integration | Japan Architecture Review |
| | Newest Construction Engineering | Unknown |
| | New Editor of Architecture | Unknown |
### Table 2. Publication and distribution of the *Waseda Architecture Lecture Notes*.

| Publication and distribution | Storage statement |
|-----------------------------|-------------------|
| Oct. 1929 | Apr. 1930 | Oct. 1930 | Apr. 1931 | Oct. 1931 | Apr. 1932 | Oct. 1932 | Apr. 1933- Oct. 1942 | Oct. 1942 |
| Original edition 6 volumes | 1st edition 6 volumes | 2nd edition 6 volumes | 3rd edition 18 volumes | 4th edition 18 volumes | 5th edition 18 volumes | 6th edition 18 volumes | 7th-15th edition 18 volumes | 26th edition 18 volumes | Set I | Set II | Set III | Set IV |
| Kōchi Satō | Architecture Outline | Overview and History | Vol. 6 | Vol. 3 | Vol. 6 | Vol. 10 | Vol. 1 | N/A | N/A | N/A |  ● |
| Otsu Rō | Orient Architectural History Outline | Overview and History | Vol. 2 | Vol. 3 | Vol. 6 | Vol. 3 | Vol. 2 | N/A | N/A | N/A |  ● |
| Nakamura | Western Countries Architectural History | Overview and History | Vol. 2 | Vol. 3 | Vol. 2 | Vol. 3 | Vol. 2 | N/A | N/A | N/A |  ● |
| Yasushi Tanabe | Japanese Architectural History | Overview and History | Vol. 2 | Vol. 3 | Vol. 6 | Vol. 3 | Vol. 2 | N/A | N/A | N/A |  ● |
| Wajirō Kon | Configuration Art Argument | Overview and History | Vol. 13 | Vol. 18 | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Kenji Imai | Modern Architecture Outline | Overview and History | Vol. 6 | Vol. 3 | Vol. 6 | Vol. 3 | Vol. 2 | N/A | N/A | N/A |  ● |
| Tani Motoguchi | Craft Art History | Overview and History | Vol. 6 | Vol. 3 | Vol. 6 | Vol. 3 | Vol. 2 | N/A | N/A | N/A |  ● |
| Shiro Okada | Decoration and History | Overview and History | Vol. 4 | Vol. 5 | Vol. 6 | Vol. 3 | Vol. 2 | N/A | N/A | N/A |  ● |
| Kyōji Yoshida, Tsutomu Sakai | Construction Materials | Material and Construction | Vol. 5 | Vol. 6 | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Ryoju Suzuki, Masao | Structural Dynamics | Material and Construction | Vol. 6 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Fukushima, Isamu Ishii | Steel Frame Construction | Material and Construction | Vol. 7 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Tachū Naide, Sei Kawai | Reinforced Concrete Construction | Material and Construction | Vol. 7 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Akira Uemae | Earthquake Resisting Construction | Material and Construction | Vol. 7 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Tachū Naide | Japanese Home Tectonics | Material and Construction | Vol. 8 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Masaharu Furutaka | General Architecture Structural Methods | Material and Construction | Vol. 10 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Yo Tokunaga | Implementation Plan | Equipment | Vol. 12 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Shiizaburo Fuji | Surveying and Application | Equipment | Vol. 10 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Takeshihiro Matsumoto | Specification | Equipment | Vol. 10 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Buchi Kimura | Integration | Equipment | Vol. 10 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Yuichi Ino | Contract Plan and Equipment | Equipment | Vol. 10 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Ryozo Saito | Lamp Illumination | Equipment | Vol. 9 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Noriyuki Kado | Architecture Electrical Code | Equipment | Vol. 9 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Shigeyo Ishikawa | Mechanical Equipment | Equipment | Vol. 11 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Ichirō Osawa | Equipment | Equipment | Vol. 8 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Ichirō Osawa | Sanitation Equipment | Equipment | Vol. 11 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Tokimasa Doi | Heating and cooling equipment | Equipment | Vol. 12 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Shōgo Sakurai | Ventilation equipment | Equipment | Vol. 12 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Kōchō Kimura | Darfing Method | Drawing | Vol. 13 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Soshiroda | Drawing | Drawing | Vol. 3 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Wajirō Kon | Perspective Drawing and The | Drawing | Vol. 13 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Editor | Architectural drawing | Drawing | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Setsurō Yamamoto | Residential Building | Architecture Plan | Vol. 14 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Yoshitami Takeuchi | Apartment House | Architecture Plan | Vol. 14 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Kenji Imai | Museum | Architecture Plan | Vol. 15 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Kenji Imai | Library | Architecture Plan | Vol. 16 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |
| Tarō Minamime | School | Architecture Plan | Vol. 14 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  ● |

(Continued)
| Instructors/Professors | Subjects | Original edition 6 volumes | 1st edition 6 volumes | 2nd edition 6 volumes | 3rd edition 18 volumes | 4th edition 18 volumes | 5th edition 18 volumes | 6th edition 18 volumes | 7th/35th edition 18 volumes | 26th edition 18 volumes | Set I | Set II | Set III | Set IV |
|------------------------|----------|----------------------------|-----------------------|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------------|-------------------|-------|-------|-------|-------|
| Kōnosuke Sasaki        | Shinkin and Temples | Architecture Plan | Vol. 8 |                       |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Shunzai Nakamura       | Church   | Architecture Plan         |                       |          |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Kenji Imai, Yasuzihi   | Memorial building | Architecture Plan |                       |          |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Tanabe                 | Store    | Architecture Plan         | Vol. 14  |        |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Soshida                |          |                            |                       |          |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Takeo Satō             | The Department Store | Architecture Plan | Vol. 15 |        |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Takeo Yasui            | Bank     | Architecture Plan         | Vol. 15  |        |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Tachō Nairō            | Factory Building | Architecture Plan | Vol. 16 |        |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Katsumi Kitamura       | Warehouse | Architecture Plan         | Vol. 16  |        |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Yoshiyuki Satō         | Office Building | Architecture Plan | Vol. 16 |        |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Gennosuke Osawa        | Hospital Building | Architecture Plan | Vol. 17 |        |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Takeo Satō, Katsumi    | Theatre and Cinema | Architecture Plan | Vol. 15 |        |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Nakayama               |          |                            |                       |          |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Takeo Yasui            | Clubs    | Architecture Plan         | Vol. 17  |        |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Kyōji Yoshida          | Hotel and Restaurant | Architecture Plan | Vol. 17 |        |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Mit Naka               | Automobil Garage | Architecture Plan         | Vol. 16  |        |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Kyōji Yoshida          | Architectural durability | Special Lecture (Appendix) | Vol. 18 |        |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Kyōji Yoshida, Gisaburo | Urban Planning | Special Lecture (Appendix) |                       |          |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Shiōma                 |          |                            |                       |          |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Takeo Satō             | Architectural Acoustics | Special Lecture (Appendix) | Vol. 18 |        |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Köchō Kimura           | Sun Light and Lighting | Special Lecture (Appendix) | Vol. 18 |        |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Takuma Tono            | Garden   | Special Lecture (Appendix) | Vol. 17  |        |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Tōgo Murano            | Economic Problems of Building | Special Lecture (Appendix) | Vol. 18 |        |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Köchō Kimura           | Tearoom  | Special Lecture (Appendix) | Vol. 17  |        |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Tosio Satō             | Modern Architecture Guidance | Theory | Vol. 14 |        |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Fumimasa Kyoto         | Airport  |                            | Vol. 16  |        |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Tamotsu Naika          | Athletic Field |                            | Vol. 17 |        |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Masafumi Itō           | Sanitation Engineering |                            |                       |          |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Inui Hidehisa          | Manchuria Architecture |                            |                       |          |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Takuma Tono            | Western Countries Garden |                            |                       |          |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Sadao Kawashima        | Architectural Vibration |                            |                       |          |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Asahi Kagawa           | Power Station Building |                            |                       |          |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Köchō Sugisaka         | Physical Education Facility |                            |                       |          |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Asahi Kagawa           | Drilling Building |                            |                       |          |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Kousuke Hishida, Ken'ichi | Air Defense Facility |                            |                       |          |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Utsu                  |          |                            |                       |          |                       |                       |                       |                       |                             |                   |       |       |       |       |
| Yoshitaka Takeuchi     | Rural Facility |                            |                      |          |                       |                       |                       |                       |                             |                   |       |       |       |       |
### Table 3. Waseda University Architecture Lecture Notes of 7th – 25th.

| Number | Title                                      | Instructors/Professors | Pages |
|--------|--------------------------------------------|------------------------|-------|
| 1      | General Architecture Structural Methods    | Yū Tokunaga            | 235   |
| 2      | Industrial mathematics                     | Ichiōrō Ōsawa          | 85    |
| 3      | Japanese Architectural History             | Yūsushi Tanabe         | 195   |
| 4      | Western Countries Architectural History (1)| Kōichi Satō Shizumi Nakamura | 95   |
| 5      | Western Countries Architectural History (2)| Kōichi Satō Shizumi Nakamura | 130  |
| 6      | Orient Architectural History Outline       | Chuita Itō             | 170   |
| 7      | Construction Materials                     | Kyūji Yoshida Tsutomu Sakai | 320   |
| 8      | Structural Dynamics                        | Ryūzō Suzuki Masao Fukushima Isamu Ishii | 315   |
| 9      | Modern Architecture Outline               | Kenji Imai             | 150   |
| 10     | Craft Art History                          | Tari Moriguchi         | 100   |
| 11     | Steel Frame Construction                   | Tachū Naitō Sei Kawai | 110   |
| 12     | Reinforced Concrete Construction          | Akira Uenami          | 160   |
| 13     | Earthquake Resisting Construction         | Tachū Naitō            | 55    |
| 14     | Japanese Home Tectonics                    | Masaharu Furutsuka     | 170   |
| 15     | Shines and Temples                         | Kōnosuke Sasaki        | 145   |
| 16     | Lamp Illumination                         | Noriyuki Kadokura      | 70    |
| 17     | Architecture Electrical Construction       | Shigeru Ichigawa       | 80    |
| 18     | Contract Plan and Equipment                | Ryuozo Baba           | 110   |
| 19     | Specification                              | Buichi Kimura          | 70    |
| 20     | Integration                                | Yuichi Ino             | 100   |
| 21     | Architecture Outline                       | Kōichi Satō            | 65    |
| 22     | Mechanical Equipment/Equipment for Building | Ichiōrō Ōsawa          | 160   |
| 23     | Sanitation Equipment                       | Ichiōrō Ōsawa          | 200   |
| 24     | Heating and cooling equipment              | Tokimasa Doi           | 120   |
| 25     | Ventilation equipment                      | Shūgo Sakurai          | 50    |
| 26     | Surveying                                 | Shikisato Fujii        | 100   |
| 27     | Configuration Art Argument                 | Wajirō Kon             | 80    |
| 28     | Drafting Method                            | Kōichirō Kimura Saburō Soshiroda | 70   |
| 29     | Perspective Drawing and The Shadow Method  | Wajirō Kon             | 90    |
| 30     | Housing and Housing Policy                 | Katashi Yasuda         | 55    |
| 31     | Apartment House                            | Yoshitaro Takeuchi     | 85    |
| 32     | Store                                      | Kyūji Yoshida Saburō Soshiroda | 70   |
| 33     | School                                     | Tarō Mimanine         | 60    |
| 34     | Library                                    | Kenji Imai             | 70    |
| 35     | Theatre and Cinema                         | Takeo Satō/Katsumi Nakayama | 75   |
| 36     | The Department Store                       | Takeo Satō             | 50    |
| 37     | Bank                                       | Takeo Yasui            | 75    |
| 38     | Automobil Garage                           | MI Niwa                | 65    |
| 39     | Factory Building                           | Tachū Naitō            | 55    |
| 40     | Warehouse                                  | Katsunari Kitamura     | 60    |
| 41     | Office Building                            | Yoshikiyo Satō         | 60    |
| 42     | Tearoom                                    | Kōichirō Kimura        | 20    |
| 43     | Hospital Building                          | Gennosuke Osawa        | 70    |
| 44     | Western Countries Garden                   | Takuma Tono            | 50    |
| 45     | Club                                       | Takeo Yasui            | 50    |
| 46     | Hotel and Restaurant                       | Kyūji Yoshida          | 50    |
| 47     | Architectural Acoustics                    | Takeo Satō             | 50    |
| 48     | Urban Planning                             | Kyūji Yoshida Gisaburo Shiratori | 90   |
| 49     | Sun Light and Lighting                     | Kōichirō Kimura        | 75    |

### Table 4. Lecture notes published during Taishō period and early Shōwa period.

| Set     | Book                                      | Location                                      | Volumes |
|---------|-------------------------------------------|-----------------------------------------------|---------|
| I       | Suzuki Collection                         | Waseda Architectural Archive in Architecture History Laboratory | 8       |
| II      | No Cover Collection                       | Waseda Architectural Archive in Architecture History Laboratory | 18      |
| III     | Waseda University Architecture Lecture Notes Shōwa 15th | Waseda Architectural Archive in Architecture History Laboratory | 8       |
| IV      | Waseda University Architecture Lecture Notes Shōwa 17th | Waseda Architectural Archive in Architecture History Laboratory | 16      |
| V       | Waseda University Architecture Lecture Notes | Collected by the author                     | 9       |
| VI      | Waseda Architecture Lecture Notes         | Large Seminar Room of Department of Architecture | 4       |
| VII     | Waseda Architecture Lecture Notes         | Nagoya University                            | 15      |
| VIII    | Waseda Architecture Lecture Notes         | Kyoto Institute of Technology Library        | 10      |

The education of Waseda University by analyzing and discussing its contents.

### 1.4. Research methods

This study located and summarized all the first-hand architecture lecture notes shelved at Waseda University and analyzed the contents against the historical context around its publication. This paper aims to produce an overview of the development of course arrangements, specifically regarding the subject allocation and specific content throughout different versions of the course materials. Based on these analyses, this article aims to grasp the context of the correspondence education of Waseda University in the early Shōwa period, and to
| Book | Print | Publish | Editor | Printer | Publisher | Printing office |
|------|-------|---------|--------|---------|-----------|----------------|
| Waseda Architecture Lecture Notes 9 | Shōwa 11th, Dec. 7th | Shōwa 11th, Dec. 10th | Jun'ichi Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda Architecture Lecture Notes 4 | Shōwa 12th, Jan. 7th | Shōwa 12th, Jan. 10th | Jun'ichi Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda Architecture Lecture Notes 5 | Shōwa 12th, Feb. 7th | Shōwa 12th, Feb. 10th | Jun'ichi Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda Architecture Lecture Notes 7 | Shōwa 12th, Oct. 7th | Shōwa 12th, Oct. 10th | Yoshio Ōtani | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda University Architecture Lecture Notes Shōwa 15th 5 | Shōwa 15th, Aug. 7th | Shōwa 15th, Aug. 10th | Kiyohide Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda University Architecture Lecture Notes Shōwa 15th 6 | Shōwa 15th, Sept. 7th | Shōwa 15th, Sept. 10th | Kiyohide Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda University Architecture Lecture Notes Shōwa 15th 11 | Unknown | Unknown | Unknown | Unknown | Japan University Press | Unknown |
| Waseda University Architecture Lecture Notes Shōwa 15th 12 | Shōwa 16th, Mar. 5th | Shōwa 16th, Mar. 10th | Kiyohide Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda University Architecture Lecture Notes Shōwa 15th 13 | Unknown | Unknown | Unknown | Unknown | Japan University Press | Unknown |
| Waseda University Architecture Lecture Notes Shōwa 15th 14 | Shōwa 16th, May. 5th | Shōwa 16th, May. 10th | Kiyohide Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda University Architecture Lecture Notes Shōwa 15th 15 | Shōwa 16th, Jul. 5th | Shōwa 16th, Jul. 10th | Kiyohide Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda University Architecture Lecture Notes Shōwa 15th 18 | Shōwa 16th, Sept. 5th | Shōwa 16th, Sept. 10th | Kiyohide Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda University Architecture Lecture Notes Shōwa 17th 1 | Shōwa 17th, Oct. 5th | Shōwa 17th, Oct. 10th | Kiyohide Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda University Architecture Lecture Notes Shōwa 17th 2 | Shōwa 17th, Nov. 5th | Shōwa 17th, Nov. 10th | Kiyohide Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda University Architecture Lecture Notes Shōwa 17th 3 | Shōwa 17th, Dec. 5th | Shōwa 17th, Dec. 10th | Kiyohide Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda University Architecture Lecture Notes Shōwa 17th 4 | Shōwa 18th, Jan. 5th | Shōwa 18th, Jan. 10th | Kiyohide Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda University Architecture Lecture Notes Shōwa 17th 5 | Shōwa 18th, Feb. 5th | Shōwa 18th, Feb. 10th | Kiyohide Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda University Architecture Lecture Notes Shōwa 17th 6 | Shōwa 18th, Mar. 5th | Shōwa 18th, Mar. 10th | Kiyohide Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda University Architecture Lecture Notes Shōwa 17th 7 | Shōwa 18th, Apr. 5th | Shōwa 18th, Apr. 10th | Kiyohide Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda University Architecture Lecture Notes Shōwa 17th 8 | Shōwa 18th, May. 5th | Shōwa 18th, May. 10th | Kiyohide Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda University Architecture Lecture Notes Shōwa 17th 9 | Shōwa 18th, Jun. 5th | Shōwa 18th, Jun. 10th | Kiyohide Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda University Architecture Lecture Notes Shōwa 17th 10 | Shōwa 18th, Jul. 5th | Shōwa 18th, Jul. 10th | Kiyohide Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda University Architecture Lecture Notes Shōwa 17th 11 | Shōwa 18th, Aug. 5th | Shōwa 18th, Aug. 10th | Kiyohide Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda University Architecture Lecture Notes Shōwa 17th 12 | Shōwa 18th, Sept. 5th | Shōwa 18th, Sept. 10th | Kiyohide Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda University Architecture Lecture Notes Shōwa 17th 13 | Shōwa 18th, Oct. 5th | Shōwa 18th, Oct. 10th | Kiyohide Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda University Architecture Lecture Notes Shōwa 17th 14 | Shōwa 18th, Nov. 5th | Shōwa 18th, Nov. 10th | Kiyohide Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda University Architecture Lecture Notes Shōwa 17th 15 | Unknown | Unknown | Unknown | Unknown | Waseda University Press | Unknown |
| Waseda University Architecture Lecture Notes Shōwa 17th 16 | Shōwa 19th, Jan. 5th | Shōwa 19th, Jan. 10th | Kiyohide Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Waseda University Architecture Lecture Notes Shōwa 17th 17 | Shōwa 19th, Feb. 5th | Shōwa 19th, Feb. 10th | Kiyohide Aoyagi | Yoshimitsu Igarashi | Waseda University Press | Japan Printing Co., Ltd. Enokimachi Factory |
| Set | Number | Book                  | Catalogue                          |
|-----|--------|-----------------------|------------------------------------|
| I   | 1      | Suzuki Collection     | Japanese Home Tectonics            |
|     |        |                       | General Structural Methods         |
|     | 2      | Suzuki Collection     | Sun Light and Lighting             |
|     |        |                       | Lamp Illumination                  |
|     | 3      | Suzuki Collection     | Surveying                          |
|     | 4      | Suzuki Collection     | Specification                       |
|     | 5      | Suzuki Collection     | Urban Planning                      |
|     |        |                       | Sanitation Equipment               |
|     | 6      | Suzuki Collection     | Heating and cooling equipment      |
|     | 7      | Suzuki Collection     | Factory                            |
|     | 8      | Suzuki Collection     | Hotel and Restaurant               |
| II  | 1      | No cover              | Office Building                    |
|     | 2      | No cover              | Earthquake Resisting Construction  |
|     | 3      | No cover              | Architecture Electrical Code       |
|     | 4      | No cover              | Contract Plan and Equipment        |
|     | 5      | No cover              | Specification                       |
|     | 6      | No cover              | Mechanical Equipment               |
|     | 7      | No cover              | Sanitation Equipment               |
|     | 8      | No cover              | Heating and cooling equipment      |
|     | 9      | No cover              | Drafting Method                    |
|     | 10     | No cover              | Store                              |
|     | 11     | No cover              | School                             |
|     | 12     | No cover              | Ventilation equipment              |
|     | 13     | No cover              | The Department Store               |
|     | 14     | No cover              | Factory                            |
|     | 15     | No cover              | Warehouse                          |
|     | 16     | No cover              | Architectural Acoustics            |
|     | 17     | No cover              | Appendix                           |
|     | 18     | No cover              | Appendix                           |
| III | 1      | Waseda University Architecture Lecture Notes Shōwa 15th | Structural Dynamics |
|     | 2      | Waseda University Architecture Lecture Notes Shōwa 15th | Modern Architecture Outline       |
|     | 3      | Waseda University Architecture Lecture Notes Shōwa 15th | Mechanical Equipment/Equipment for Building |
|     | 4      | Waseda University Architecture Lecture Notes Shōwa 15th | Sanitation Equipment              |
|     | 5      | Waseda University Architecture Lecture Notes Shōwa 15th | Heating and cooling equipment     |
|     | 6      | Waseda University Architecture Lecture Notes Shōwa 15th | Ventilation equipment             |
|     | 7      | Waseda University Architecture Lecture Notes Shōwa 15th | Drafting Method                   |
|     | 8      | Waseda University Architecture Lecture Notes Shōwa 15th | Residential Building              |
|     |        |                       | Store                              |
|     |        |                       | Apartment House                    |
|     |        |                       | Factory                            |
|     |        |                       | Warehouse                          |

(Continued)
| Set | Number | Book | Catalogue |
|-----|--------|------|-----------|
| IV  | 1      | Waseda University Architecture Lecture Notes Shōwa 17th | Architecture Outline | Japanese Architectural History |
|     | 2      | Waseda University Architecture Lecture Notes Shōwa 17th | Orient Architectural History Outline | Western Countries Architectural History |
|     | 3      | Waseda University Architecture Lecture Notes Shōwa 17th | Construction Materials | |
|     | 4      | Waseda University Architecture Lecture Notes Shōwa 17th | General Architecture Structural Methods | |
|     | 5      | Waseda University Architecture Lecture Notes Shōwa 17th | Structural Dynamics | Earthquake Resisting Construction |
|     | 6      | Waseda University Architecture Lecture Notes Shōwa 17th | Wooden Structure | Reinforced Concrete Construction |
|     | 7      | Waseda University Architecture Lecture Notes Shōwa 17th | Electric Welding | Steel Frame Construction |
|     | 8      | Waseda University Architecture Lecture Notes Shōwa 17th | Architecture Electrical Code | Mechanical Equipment |
|     | 9      | Waseda University Architecture Lecture Notes Shōwa 17th | Air Conditioning Method | Sanitation Equipment |
|     | 10     | Waseda University Architecture Lecture Notes Shōwa 17th | Japanese Home Tectonics | Shrines and Temples |
|     | 11     | Waseda University Architecture Lecture Notes Shōwa 17th | Contract Plan and Equipment | Specification |
|     | 12     | Waseda University Architecture Lecture Notes Shōwa 17th | Sun Light and Lighting | Sanitation Engineering |
|     | 13     | Waseda University Architecture Lecture Notes Shōwa 17th | Western Countries Garden | Mandshuria Architecture |
|     | 14     | Waseda University Architecture Lecture Notes Shōwa 17th | Housing and Housing Policy | Architectural Acoustics |
|     | 15     | Waseda University Architecture Lecture Notes Shōwa 17th | Factory Building | Architectural Vibration |
|     | 16     | Waseda University Architecture Lecture Notes Shōwa 17th | Office Building | |
|     | 17     | Waseda University Architecture Lecture Notes Shōwa 17th | School Building | Library |
|     |        |       | Drilling Building | Hospital Building |
|     |        |       | Store | Warehouse |
|     |        |       | | Bank |
| V   | 1      | Waseda University Architecture Lecture Notes 2 | Orient Architectural History Outline | Western Countries Architectural History |
|     | 2      | Waseda University Architecture Lecture Notes 3 | Drafting Method | Perspective Drawing and The Shadow Method |
|     | 3      | Waseda University Architecture Lecture Notes 8 | Sanitation Equipment | Architectural Surveying |
|     | 4      | Waseda University Architecture Lecture Notes 9 | Air Conditioning Method | Sanitation Equipment |
|     | 5      | Waseda University Architecture Lecture Notes 11 | Contract Plan and Equipment | Integration |
|     | 6      | Waseda University Architecture Lecture Notes 12 | Sun Light and Lighting | Mandshuria Architecture |
|     | 7      | Waseda University Architecture Lecture Notes 13 | Western Countries Garden | Architectural Acoustics |
|     | 8      | Waseda University Architecture Lecture Notes 14 | Housing and Housing Policy | Architectural Vibration |
|     | 9      | Waseda University Architecture Lecture Notes 15 | Factory Building | Japanese-Style Garden |
|     | 10     | Waseda Architecture Lecture Notes 9 | Lamp Illumination | Theatre and Cinema |
|     | 11     | Waseda Architecture Lecture Notes 4 | Construction Materials | Tearoom |
|     | 12     | Waseda Architecture Lecture Notes 5 | Structural Dynamics | Hotel and Restaurant |
|     | 13     | Waseda Architecture Lecture Notes 7 | Steel Frame Construction | |
|     | 14     | Waseda Architecture Lecture Notes 17 | Reinforced Concrete Construction | Earthquake Resisting Construction |
|     | 15     | Waseda Architecture Lecture Notes 17 | | |
evaluate the historical role and status of Waseda University in architecture education from early Shōwa through World War II.

2. Correspondence education at Waseda University

As mentioned above, in the 2016 Spring Exhibition, Waseda University Center of University History conducted a systematic and comprehensive overview of correspondence education in Waseda University as a whole. A summary is provided below.

Correspondence education as an independent and complete educational system in Waseda University was introduced and established by Professor Sanae Takada, the first Principal of Waseda University, in 1886. This system served potential students who lacked economic resources, lived too far away, or simply lacked the time for a consistent full-time or evening-only education program (Horii, Motohashi, and Nakatani 2013). With this intention in mind, the system invited professors and scholars to write and compile course materials that could be later assembled and mailed to the off-campus students, and thus freed both teachers and students of the time and geographic limitations against general mass education.

Sanae Takada made significant contributions to the compilation and publication of these course materials that became lecture notes. He was one of the earliest authors of the lecture notes used in the Correspondence Lecture Seminar\(^3\). He also proposed and mobilized the publication of the Waseda University lecture notes. He invited most tenured professors and teachers at Waseda University to participate in writing the lecture notes, and entrusted the publication processing with Keita Yokota, who shared his vision and ambitions. After Keita Yokota ceased to work in this area, the responsibility of publication internalized into Waseda University and went under the charge of the Tokyo College Press, the predecessor of today’s Waseda University Press. The earliest publications were Lecture Notes of Department of Political Science and Lecture Notes of School of Law; each volume contained 60 pages and charged 8Yen. This vision of open university\(^4\) was deeply rooted and pervaded into future correspondence education at Waseda University.

Lecture notes were the vital medium and channel of education at that time. These materials not only helped a lot of off-campus students personally, but also extended the scope and depth of Waseda University.

3. Outline of the Waseda Architecture Lecture Notes

3.1. Publication and distribution

previous literature shows inconsistencies in the time frame during which the Waseda Architecture Lecture Notes were published and distributed. As mentioned in Section 1.2, Hisao Nakajima dated the lecture notes from Shōwa 4th (1929) (Nakajima 1987), while Takahide Horii identified twenty-one reprints and distributions between 1926 and 1939 (Horii, Motohashi, and Nakatani 2013). This research aims to address this inconsistency over the publication and distribution of the lecture notes.

A preceding context can be found in Waseda University Press: A History of 100 Years. In October 1928, the Waseda University Press published the Pre-College Lecture Notes of Electrical Engineering. The unexpected popularity encouraged the Press to plan further publishing of lecture notes in other subjects, including architecture, and expand recruiting of publication staff. On October 1929, the project of the Waseda Architecture Lecture Notes officially launched.

A summary compiled through Waseda Lecture Notes Samples (Waseda University 1929)\(^5\) in Tables 2 and 3 can provide better insights into the publishing and distribu-

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\(^3\) A pioneer of corresponding education in Japan that started in 1885. The authors included people from the University of Tokyo, and Sanae Takada as a related person from Waseda University were also involved.

\(^4\) In the second half of the 19th century, the European and American countries, mainly in the United Kingdom and the United States, launched a university extension campaign to help females gain higher education access. This campaign implemented communication education through touring.

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Figure 2. First-hand materials-Waseda University Architecture Lecture Notes.
tion of the lecture notes. It showed that the original edition was published in October Shōwa 4th (1929). According to the last version of *Waseda Architecture Lecture Notes* Shōwa 17th collected, it accurately recorded this version was the 26th lecture notes which issued from October Shōwa 17th (1942) to March Shōwa 19th (1944). It showed that the whole set of the Waseda Architecture Notes were published every April and October, Shōwa 4th (1929), and March, Shōwa 19th (1944), a total of 26 times include the original edition. From the original to the third edition were published 6 volumes included *Overview and History, Material and Construction, Implementation Plan, Equipment, Drawing and Architecture Plan*. From the fourth edition to the final edition were published 18 volumes. Therefore, we could conclude both Hisao Nakajima and Horii Takahide slightly missed the accurate publication periods.

In summary, the *Waseda Architecture Lecture Notes* were written and compiled by professors from Waseda University Department of Architecture, and were published by the Waseda University Press. Each volume of the notes consisted of the typical textbook materials, short essays written by professors, introductory essays on architecture topics, and the editors’ afterword. Architecture topics were a daily practice to insert breaks in each lesson and provide light architecture-related facts to off-campus students. For providing extracurricular knowledge to off-campus students, short essays written by professors were posted, and the editorial department was responsible for incorporating current events. The textbook materials covered various topics including history, materials and tectonics, construction, equipment, drawing, design, as well as a few special lectures. All the subjects were consolidated in 18 volumes. Assignments between the volumes depended on the contents of the issue: some might take up one or two volumes, while others with fewer contents were compiled into one single volume. The off-campus students had the freedom to pick the useful volume(s) for purchasing (Waseda University 1929).

### 3.2. Collection and storage

Figure 2, Tables 4–6 below summarized the research results from a detailed search through Waseda University. The Waseda Architecture Lecture Notes are now collected and shelved in five different locations. Waseda Architectural Archive of Architecture History Laboratory has 50 sets of combined versions in separate packages, Large Seminar Room of Department of Architecture has 4 volumes, Nagoya University has 15 volumes. Kyoto Institute of Technology has 10 volumes. All the lecture notes, except for those stored at Nagoya University and Kyoto Institute of Technology, were collected and analyzed in detail, including the original contents, the advertisements attached, the editors’ afterword, etc, to track and chronicle each of the volumes.

### 3.3. Review of the content and its development

Our research work in this area started from consolidating the four sets of the notes altogether, and we ran a thorough review of the contents of the Lecture Notes, attached advertisements, and the editors’ afterword.

#### 3.3.1. Set I: the Suzuki Collection

This was a personal collection. The front page was only embellished with letters “The Suzuki Collection”, and was enclosed by a brown hardcover, the same as in the Waseda Lecture Notes advertisements and were apparent traces of splitting and rebinding. The collection consisted of 7 volumes of specific subjects, and 1 volume of appendix, the contents of each volume is shown in Table 7 below. Two further investigations into its contents highlighted a piece of the introduction of topics (Waseda University 1929). The first one introduced the Bauhaus, “It has been 10 years since Walter Gropius established the Bauhaus in 1919.” we could infer that the Suzuki Collection was published in 1929 (Shōwa 4th). The second investigation showed a decorative painting on the theme of a horse made by an unknown craftsman. The editor mentioned, “Next year is the year of the horse; we would like to use this as a New Year’s greeting to you in advance.” 1930 after 1929 is the Year of the Horse, which also validated the previous inference.

Meanwhile, in one of the short essays, Professor Nakao mentioned, “The term international architecture was advocated by Walter Gropius in 1928, but it appeared in Japan in July 1927. Now on the verge of entering 1930, I desperately hope that young architects can work hard.” (Waseda University 1929) which implied that this set was published right before 1930, which matches our hypothesis that it was the original edition in 1929 (Shōwa 4th).

To sum up, the Suzuki Collection comes from the original edition of the Lecture Notes in Shōwa 4th.

#### 3.3.2. Set II: no cover

This set had 16 volumes of specific subjects and 2 volumes of appendices. It was from the Rare Books Archive and was also undated. The particular contents are shown in the Table 8.

The subjects were incomplete, so we could not determine the publication time simply based on the subject names. A further investigation into its contents highlighted a piece of editors’ afterword. It mentions, “The mid-October this year will witness the 50th anniversary of Waseda University, and the University will host a week-long celebration. The University Press plans to take this opportunity and to host an off-campus conference, and we invite all of you to actively get
| Table 7. Specific contents of the Suzuki collection. |
|---------------------------------------------------|
| 1. Japanese House Construction | Material and Construction | Shoji Furuzuka | 1. General 2. Basic 3. Shaft design 4. Roof structure 5. Structure of axis 6. Internal miscellaneous structure 7. External miscellaneous structure 8. joiney |
| General Structural Methods | Material and Construction | Yō Tokunaga | 1. Review 2. Foundation 3. Walls 4.Floor construction 5. Roof 6. Roofing 7.Ceiling 8.Baseboard and panel 9. Window at the entrance 10.Stairs 11.End of walls 12.Painting |
| Structural Dynamics | Material and Construction | Ryuō Suzuki Masao Fukushima Isamu Ishii | 1. First part: 1.Mechanics 2.Mechanics of materials 3.Application to building structures 4.Foundation 5.Retaining Wall 6.Chamber 7.Deflection Due to Bonding Stresses 8. Continuous Beams 9.Frame Structure with Rigid Joints 10.Frame Structure with Pin Joints |
| 2. Sun Light and Lighting | Special Lecture | Kōchirō Kimura | 1. General description 2. Sun position 3. Sunlight and architecture 4. Physical properties of sunlight 5. Illuminance of a wall 6. The room illuminance of light entering through various windows |
| Lamp Illumination | Equipment | Noriyuki Kadokura | 1. Light 2. Lamp 3. Measuring device 4. Lighting fixture 5. Lighting method 6. Lighting samples |
| Architectural Acoustics | Special Lecture | Takerō Satō | 1. Outline 2. Acoustic design of audience Hall 3. Soundproof structure of building |
| Surveying | Implementation Plan | Shikasaburo Fujii | 1. General 2. Chain surveying 3. Compass measurement 4. High and low surveying 5. High and low surveying 6. Flat surveying 7. Area calculation method 8. Volume calculation 9. Surveying drawing method 10. Instrument adjustment method and problems |
| 3. Specification | Implementation Plan | Buichi Kimura | 1. Outline of construction 2. Main construction specifications 3. Incidental work 4. Cautions 5. Japanese carpentry |
| Integration | Implementation Plan | Yuichi Ino | 1. Significance and requirements of the multiplication method 2. Assume construction 3. Foundation construction 4. Concrete construction 5. Reinforced construction 6. Steel construction 7. Waterproof construction 8. Brick construction 9. Roof tile construction 10. Masonry 11. Wood construction 12. Metal construction 13. Joinery construction 14. Metal joinery construction 15. Roofing construction 16. Plastering construction 17. Glass construction 18. Painting construction 19. Scroll mounter construction 20. Site construction 21. Miscellaneous construction 22. Samples |
| 4. Urban Planning | Special Lecture | Kyōji Yoshida Gisaburo Shibatani | 1. General 2. Regional differentation planning 3. Stairs architectural planning 4. Development of green shade |
| Regulations and Application | Implementation Plan | Takekō Matsumoto | 1. General 2. Utility area 3. Architectural line 4. Height of building 5. Vacant land 6. Structural equipment 7. General structural strength 8. Fireproof district 9. Artistic area 10. Special building 11. Construction execution procedures 12. Discipline 13. Compensation and Relief 14. Mutual Use and excluded buildings 15. Construction Date |
| Economic Problems of Building | Special Lecture | Tōgo Murano | 1. Introduction 2. General 3. Specific Issues (Land issue/Architectural issue/Life and loss of architecture/Mechanical equipment/Land and building relations) 4. Problems in construction (high-rise building/regional structure and construction/investment) |
| 5. Sanitation Equipment | Equipment | Ichiro Osawa | 1. Water supply equipment and water usage 2. Water well and source of river 3. Water properties and tests 4. Hydraulic requirements 5. Pump 6. Water purification method 7. Water supply facility based on water supply 8. Water supply piping equipment 9. Faucets 10. Water pipe 11. Indoor fire extinguishing equipment 12. Warm water method 13. Sanitary equipment 14. Trap (deodorant bun) 15. Drainage pipes 16. Indoor drainage 17. Sewage separation method |
| Ventilation equipment | Equipment | Shōgo Sakurai | 1. General 2. Exchange method 3. Air cleaning method, heating method and dehumidification method 4. Sending machine and exhausting machine 5. Duct design and structure |
| Mechanical Equipment/Equipment for Building Heating and cooling equipment | Equipment | Ichiro Osawa | 1. Motor 2. Elevator 3. Transport equipment |
| Contract Plan and Equipment | Equipment | Ryōzo Baba | 1. General 2. The basis of the construction planning 3. Arrangement inside and outside the construction site 4. Classification of various construction machinery 5. Details of various construction machinery 6. Mechanical equipment for concrete construction 7. Concrete forms 8. Construction works |
| Architecture Electrical Construction | Equipment | Shigeru Ichigawa | 1. The importance of electrical equipment in buildings 2. Types of indoor electrical equipment and power requirements 3. Type of wiring method 4. Precautions for construction 5. Special room and special equipment |
| 6. Factory | Architecture Plan | Tachu Naib | 1. General 2. Land and site 3. Plan of a house 4. Types of factory buildings 5. Structure of main building 6. Structure of each part and construction 7. Floor 8. House roof 9. Daylighting and lighting 10. Construction equipment (heating room, ventilation, moisture supply, fire prevention) 11. Transportation equipment 12. Ancillary equipment and welfare facilities 13. Thermal heating room method 14. Humidity adjusting device |
| Warehouse | Architecture Plan | Katsunori Kitamura | 1. Concept of shed and warehouse 2. Concept of cargo 3. Concept of cargo handling equipment 4. Shed 5. Warehouse 6. Special warehouse |
| Automobile Garage | Architecture Plan | Mi Niwa | 1. General description of automatic garage 2. Structure of automatic garage 3. Equipment and facilities of automatic garage |
| 7. Bank | Architecture Plan | Takeo Yasui | 1. General 2. Bank History 3. Bank Administrative Organization 4. Building Planning |
| The Department Store | Architecture Plan | Takeo Šato | 1. Department store history and organization 2. Department store building |
| Theatre and Cinema | Architecture Plan | Takeo Šato Katsumi Nakayama | 1. History of theater building 2. Trends in modern theater building 3. Stage |
| Hotel and Restaurant | Architecture Plan | Kyoji Yoshiida | 1. Planning concept 2. Building planning (General planning/Building planning/Equipment concept) |
| Apartment House | Architecture Plan | Yoshitarō Takeuchi | 1. Installation (Significance and type/Housing problem and apartment/History/Apartment in Western countries/Japan’s state) 2. Design (Selection of site/plan for horizontal plane/plan for vertical plane/special apartment)
| Number | Title | Instruction/Professors | Catalog |
|--------|-------|------------------------|---------|
| II 1   | Office Building | Architectural Plan | 1. Overview of office building 2. Architectural planning 3. Floor planning 4. Design of building details 5. Elevator 6. Structural planning 7. Incidental equipment 8. High-rise buildings and urban problems |
| 2      | Seismic Resisting Construction | Material and Construction Equipment | 1. General 2. Earthquake resistant structure 3. The solution of the frame to the coercive force 4. Earthquake resistant calculation principle 5. Calculation example |
| 3      | Architecture Electrical Construction Equipment | Equipment | 1. The importance of electrical equipment in buildings 2. Types of indoor electrical equipment and power requirements 3. Type of wiring method 4. Precautions for construction 5. Special room and special equipment |
| 4      | Contract Plan and Equipment | Equipment | 1. General 2. The basis of the construction planning 3. Arrangement inside and outside the construction site 4. Classification of various construction machinery 5. Details of various construction machinery 6. Mechanical equipment for concrete construction 7. Concrete forms 8. Construction works |
| 5      | Specification Mechanical Equipment/Equipment for Building | Implementation Plan Equipment | 1. Outline of construction 2. Main construction specifications 3. Incidental work 4. Cautions 5. Japanese carpentry |
| 6      | Sanitation Equipment | Equipment | 1. Water supply equipment and water usage 2. Water well and source of river 3. Water properties and tests 4. Hydraulic requirements 5. Pump 6. Water purification method 7. Water supply facility based on water supply 8. Water supply piping equipment 9. Faucets 10. Water pipe 11. Indoor fire extinguishing equipment 12. Warm water method 13. Sanitary equipment 14. Trap (deodorant bun) 15. Drainage pipes 16. Indoor drainage 17. Sewage separation method |
| 7      | Heating and cooling equipment | Equipment | 1. The concept of heating house 2. The physical basis of heating house 3. The method of losing heat 4. Warm water tank and steam tank 5. Radiator and heater 6. Accessories of the radiator 7. Connection method of the iron pipe 8. Pumps 9. Fire room heating device 10. Warm water heating room device 11. Forced warm water heating room device 12. Steam room heating device 13. Thermal heating room method 14. Humidity adjusting device |
| 8      | Drafting Method Drawing | Koichiro Kimura Saburō Soshihara | 1. General 2. Sketching equipment and materials 3. Architectural drawing 4. Abbreviated design drawing 5. Main design (Part one) Design part 6. Main design (Part two) Structural drawing |
| 9      | Store Architecture Plan | Koichiro Kimura Saburō Soshihara | 1. General 2. General plan 3. Store planning 4. Inside of store planning 5. Daylighting and lighting 6. Heating and ventilation of the store 7. Display method and display board of display window |
| 10     | School Architecture Plan | Torō Minamisato | 1. Introduction 2. School site 3. Plan of school building 4. Ordinary classroom 5. Special classroom 6. School office 7. Corridor and other places 8. Sanitary equipment 9. Lecture hall 10. Structure of school building 11. Style of school building 12. Exercise yard 13. Mechanical equipment |
| 11     | Ventilation equipment | Equipment | 1. General 2. Exchange method 3. Air cleaning method, heating method and dehumidification method 4. Sending machine and exhausting machine 5. Duct design and structure |
| 12     | The Department Store Factory Architecture Plan | Tachio Naito | 1. Department store history and organization 2. Department store building |
| 13     | Warehouse Architecture Plan | Katsunari Kitamura | 1. Concept of shed and warehouse 2. Concept of cargo 3. Concept of cargo handling equipment 4. Shed 5. Warehouse 6. Special warehouse |
| 14     | Architectural Acoustics Special Lecture | Takeo Sato | 1. Outline 2. Acoustic design of audience hall 3. Soundproof structure of building |
involved." (Waseda University 1932) This celebration referred to the 50th anniversary ceremony of Waseda University and helped us identify the publication as around Shōwa 7th (1932). Some additional information can also be extracted from the other pieces of the afterword, which mentioned that the publication of Modern Architecture Survey, History of Arts and Crafts, and Introduction to Architecture was in early summer; the publication of Japanese Home Tectonics, and Shrines and Temples were in mid-summer, and the publication of Electric Lighting, Electric Engineering, Construction Planning was in the fall (Waseda University 1932). This additional information could help us pinpoint that the whole set was published starting April, Shōwa 7th (1932).

A quick comparison showed that the 16 subjects in both editions were all the same except for "Machinery equipment", in which this version abridged the Miscellaneous Equipment chapter.

Therefore, we could reach the preliminary conclusion that design courses were generally consistent and rarely under revision, but the "Machinery Equipment" course was under constant editing and rewriting, and the newer version offered a more in-depth tutorial in order to make the equipment more suitable for the use of the building.

3.3.3. Set III: Shōwa 15th (1940)

This collection in the Archive only consisted of eight volumes, and the detailed contents were listed in the Table 9 (Waseda University 1940).

Again, by comparison with the earlier ones, the specific contents were still the same except for "Machinery Equipment", in which this version abridged the Miscellaneous Equipment chapter.

Western Countries Architectural History: As for architectural history, we could not conduct a comprehensive comparison due to the lack of reserve at hand. We only have the version from Shōwa 17th.

- Architectural Surveying:
  - As for the survey, compass measurement and instrumental correction have been deleted.

- General Architecture Structural Methods:
  - The contents are the same, but were re-edited and adjusted in the teaching sequence.

- Structural Dynamics:
  - The versions from Shōwa 4th and Shōwa 15th are organized around the powerful beams and. frames as the core of the curriculum. However, in the Shōwa 17th version, beams and frames are integrated into Chapter 2, the Frame Mechanics. Chapter 3 and Chapter 4 of Shōwa 4th are expanded from the original building to the mechanics of building itself and the surroundings.

- Architecture Electrical Construction:
  - The chapter on significance for buildings is abridged compared to the Shōwa 4th version.

- Mechanical Equipment:
  - The Shōwa 15th version adds two chapters based on the Shōwa 4th version, and the Shōwa 17th version adds three more additional chapters.

- Air Conditioning Method:
  - Some of the previous contents about heating/cooling settings are integrated into two chapters here.

- Contract Plan and Equipment:
  - The Shōwa 4th version focuses on microscopic demonstrations of the construction equipment; the Shōwa 17th version focuses on a broad picture of the whole building and teaches through reviewing the constructional purposes and the scopes of construction of the buildings.

- Specification:
  - The contents about wooden construction work discussed by the Shōwa 4th version is moved to the syllabus of the new course, Wood Construction.

- Integration:
  - Chapters are re-sequenced, but the contents remain the same.

- Sun Light and Lighting:
  - The versions from Shōwa 4th and Shōwa 15th explain the relationship between sunlight and buildings, including the location of the sun, the physical features of the sunlight, and the illuminance spectrum of all kinds of light through the windows. The Shōwa 17th version compresses everything into the first chapter and adds the discussion of manual control of lighting into the rest of the chapters.

- Sanitation Engineering:
  - The same content is discussed in the original Ventilation Equipment course.

- Manchuria Architecture:
  - Newly added

3.3.4. Set IV: Shōwa 17th (1942)

This collection was found in the Rare Books Archive, 1–17 volumes could be integrated and the specific contents were listed in Tables 10 and 11 (Waseda University 1942).

The two years between this edition and the previous Shōwa 15th edition witnessed significant changes in the subject allocation and course contents. The detailed difference could be found as follows.

- Architecture Outline:
  - As for the architectural history, we compared the contents of the different versions of the Waseda University Lecture Notes samples from Shōwa 4th, Shōwa 7th, Shōwa 15th and Shōwa 17th. We find that the Japanese architectural history did not undergo significant change during this period, while one chapter of prototype architecture was deleted from Western architectural history. Therefore, no exceptional development was seen within the education of the subject of architectural history.
| Set | Number | Book | Title | Classification | Instruction/Professors | Catalog | Pages |
|-----|--------|------|-------|----------------|------------------------|---------|-------|
| 1   | 1      | Waseda University Architecture Lecture Notes Showa 15th | Structural Dynamics | Material and Construction | Ryūzō Suzuki Masao Fukushima Isamu Ishii | First part: 1.Mechanics 2.Mechanics of materials 3.Application to building structures 4.Foundation 5.Retaining Wall 6.Climber Second: 7.Deflection Due to Bonding Stresses 8.Continuous Beams 9.Framed Structure with Rigid Joints 10.Framed Structure with Pin Joints | 313 |
| 2   | 6      | Modern Architecture Outline | Overview and History | Kenji Imai | 1. Introduction 2. Before Rococo After Rococo 3. 19th Century Architecture 4. Causes of the rise of modern architecture 5. Secession movement and its aftermath 6. Trends in modern architecture 7. International architecture movement | 149 |
| 3   | 11     | Waseda University Architecture Lecture Notes Showa 15th | Modern Architecture Outline | Overview and History | Tari Moriguchi | 1. Introduction 2. Ancient craft art 3.Mid-century craft art 4. Crafts Art of the Renaissance 5. Craft art in the Ruki dynasty 6. Craft art of the 19th century 7. Western modern glass, glass, goldsmith 8.About modern craft art | 98 |
| 4   | 12     | Waseda University Architecture Lecture Notes Showa 15th | Heating and cooling equipment | Equipment | Ichiro Osawa | 1. Motor 2.Elevator 3.Transport equipment 4.Gas equipment 5.Refrigeration equipment | 180 |
| 5   | 13     | Configuration Art Argument | Overview and History | ? | ? | ? | ? |
| 6   | 14     | Waseda University Architecture Lecture Notes Showa 15th | Residential Building | Architecture Plan | Setsuro Yamamoto | 1. General 2. Each room of house 3. Equipment | ? |
| Set | Number | Book | Title                        | Classification       | Instructor/Professors | Catalog                                                                 | Pages |
|-----|--------|------|------------------------------|----------------------|-----------------------|--------------------------------------------------------------------------|-------|
| 7   |        | Waseda University Architecture Lecture Notes Showa 15th 16 | Store                | Architecture Plan    | Kyōji Yoshida Saburō Soshiroda                                       | 1. General 2. General plan 3. Store planning 4. Inside of store planning 5. Daylighting and lighting 6. Heating and ventilation of the store 7. Display method and display board of display window | 55    |
|     |        |      | School                       | Architecture Plan    | Tarō Minamine          | 1. Introduction 2. School site 3. Plan of school building 4. Ordinary classroom 5. Special classroom 6. School office 7. Corridor and other places 8. Sanitary equipment 9. Lecture hall 10. Structure of school building 11. Style of school building 12. Exercise yard 13. Mechanical equipment | 71    |
|     |        |      | Apartment House Automobil Garage | Architecture Plan   | Yoshitaro Takeuchi Mi Niwa                                     | ? 1. General description of automatic garage 2. Structure of automatic garage 3. Equipment and facilities of automatic garage | 61    |
|     |        |      | Factory                      | Architecture Plan    | Tachū Naitō           | 1. General 2. Land and site 3. Plan of a house 4. Types of factory buildings 5. Structure of main building 6. Structure of each part and construction 7. Floor 8. House roof 9. Daylighting and lighting 10. Construction equipment (heating room, ventilation, moisture supply, fire prevention) 11. Transportation equipment 12. Ancillary equipment and welfare facilities | 53    |
|     |        |      | Warehouse                    | Architecture Plan    | Katsunari Kitamura    | 1. Concept of shed and warehouse 2. Concept of cargo 3. Concept of cargo handling equipment 4. Shed 5. Warehouse 6. Special warehouse 7. Overview of office building 2. Architectural planning 3. Floor planning 4. Design of building details 5. Elevator 6. Structural planning 7. Incidental equipment 8. High-rise buildings and urban problems | 60    |
|     |        |      | Office Building              | Architecture Plan    | Yoshikiyo Satō       | ? 1. General 2. Regional differentiation planning 3. Stairs architectural planning 4. Development of green shade | 59    |
| 8   |        | Waseda University Architecture Lecture Notes Showa 15th 18 | Urban Planning       | Special Lecture      | Kyōji Yoshida         | 1. General 2. Regional differentiation planning 3. Stairs architectural planning 4. Development of green shade | 89    |
|     |        |      | Architectural Acoustics      | Special Lecture      | Takeo Satō           | 1. Outline 2. Acoustic design of audience hall 3. Soundproof structure of building | 49    |
|     |        |      | Sun Light and Lighting       | Special Lecture      | Kōichirō Kimura      | 1. General description 2. Sun position 3. Sunlight and architecture 4. Physical properties of sunlight 5. Illuminance of a wall 6. The room illuminance of light entering through various windows | 73    |
|     |        |      | Appendix                     | Appendix             | Appendix              | Appendix                                                                | Appendix |
### Table 10. Specific contents of the the Showa 17th edition-1.

| Set | Number | Book (Notes Showa 17th) | Title | Classification | Instructors/Professors | Table of contents | Pages |
|-----|--------|-------------------------|-------|----------------|------------------------|------------------|-------|
| 4   | 1      | Waseda University Architecture Lecture Notes Showa 17th | Architecture Outline | Overview and History | Kōchi Satō | 1. The meaning and definition of Architecture 2. Origin of Architecture (Architecture in the primitive times) 3. Development of Architecture seen from the structure 4. Development of science and progress of Architectural structure 5. The development of Architecture seen from the point of application 6. Architecture as a art of space formation 7. Problems related to engineers and construction End: The present and The future of the Japanese Architectural World | 61 |
|     |        |                         | Japanese Architectural History | Overview and History | Yasushi Tanabe | 1. General 2. Prehistoric history 3. Asuka period 4. Early Nara period (Hakuho period) 5. Late Nara period 6. Early period (Hirohito period) 7. Lates Heian period (Fujıwara period) 8. Kamakura period 9. Muromachi period 10. Momoyama period 11. Edo period 12. Tokyo period | 193 |
| 2   | 1      | Waseda University Architecture Lecture Notes Showa 17th | Orient Architectural History Outline | Overview and History | Chiuta Itō | 1. Islamic Architecture 2. India Architectural history | 176 |
|     |        |                         | Western Countries Architectural History | Overview and History | Yasushi Tanabe | 1. General 2. Egypt Architecture 3. Western Asian Architecture 4. Greece Architecture 5. Roma Architecture 6. Initial Christianity Architecture 7. Byzantine Architecture 8. Romanesque Architecture 9. Gothic Architecture | 118 |
| 3   | 1      | Waseda University Architecture Lecture Notes Showa 17th | Drafting Method | Drawing | Kōchirō Kimura Motoo Take | 1. General 2. Sketching equipment and materials 3. Architectural drawing 4. Abbreviated design drawing 5. Main design (Part one) Design part 6. Main design (Part two) Structural drawing | 67 |
|     |        |                         | Perspective Drawing and The Shadow Method | Drawing | Wajirō Kon | 1. Introduction 2. Definition and terminology of perspective drawing 3. Line of sight and foot 4. Elimination point (attach Line elimination) 5. Measuring point 6. Architectural perspective 7. Finishing of architectural perspective and examples 8. Perspective drawing of shadows 9. Reflection perspective method 10. Definition and terminology of shadow drawing 11. Shading drawing method 12. Shading of Architecture 13. Architecture shading and examples | 91 |
|     |        |                         | Architectural Surveying | Implementation Plan | Shikasaburō Fujii | 1. Introduction 2. Chain surveying 3. Mirror surveying 4. High and low surveying 5. Flat surveying 6. Miscellaneous detector 7. Area calculation method 8. Volume calculation 9. Surveying and drawing method | 133 |
| 4   | 1      | Waseda University Architecture Lecture Notes Showa 17th | Construction Materials | Material and Construction | Kyōji Yoshida Tsutomu Sakai | 1. Introduction 2. Wood and bamboo materials 3. Stone, sand, gravel 4. Clay fired products 5. Cement and its products 6. Paintwall material 7. Glass and its products 8. Metals and their products 9. Paint and putty 10. Waterproofing, fire protection, anticorrosion, etc. 11. Plastic industrial products 12. Weaving industrial products 13. Hybrid materials | 285 |
|     |        |                         | General Architecture Structural Methods | Material and Construction | Saburō Soshiroda | 1. Review 2. Foundation 3. Walls and columns 4. Roof 5. Floor and floor covering 6. Stairs 7. Ceiling 8. Joinery and joiners 9. Miscellaneous 10. Finish | 231 |
| 5   | 1      | Waseda University Architecture Lecture Notes Showa 17th | Structural Dynamics | Material and Construction | Akira Tsuruta Isamu Ishii Shōji Gotō Kazuo Minami | 1. Mechanics of materials 1.1 Strain stress and material strength 1.2 Properties of cross-section 1.3 Simple stress 1.4 Bending moment and shear force of simple beam 1.5 Continuous bending moment and shear force of fixed beams 1.6 Beam theory and design 1.7 Union stress 1.8 Column 2. Frame mechanics 2.1 Frame union 2.2 Stationary frame 2.3 Minimum work principle 2.4 Beam deflection and tilt angle 2.5 Deflection method 2.6 Fixed moment method 2.7 Quad (or triple) moment method 2.8 High-rise multi-span rigid frame | 336 |
|     |        |                         | Earthquake Resisting Construction | Material and Construction | Kazuo Minami | 1. Earthquake 2. Earthquake damage 3. Earthquake-resistant measures 4. Earthquake-resistant method 5. Earthquake-resistant calculation example | 50 |

(Continued)
| Set | Book | Title | Classification | Instructors/Professors | Table of contents | Pages |
|-----|------|-------|----------------|------------------------|-------------------|-------|
| 7   | Waseda University Architecture Lecture Notes Showa 17th | Tree Structure | Material and Construction | Rakurō Asano | 1. Introduction. 2. Structural calculation. 3. Precautions for construction | 71 |
|     |      | Reinforced Concrete Construction | Material and Construction | Akiha Uenami | Part 1. Steel reinforced concrete materials and theory. 1. General 2. Concrete 3. Steel reinforced. 4. Application of steel reinforced concrete. 5. Steel reinforced concrete structure calculation. 6. Steel reinforced concrete beams. 7. Steel reinforced concrete columns. Part 2. Steel reinforced concrete structural design. 8. Structural calculation guidelines. 9. Steel reinforced concrete hybrid structure. 10. Steel reinforced concrete building design. | 101 |
|     |      | Steel Frame Construction | Material and Construction | Tachű Naitō Ryūzō Suzuki | 1. General 2. Material 3. Structural design requirements. 4. Joining of steel 5. Beam 6. Column 7. Truss | 141 |
|     |      | Electric Welding | Material and Construction | Tsuruda Akira | 1. General 2. Overview of various welding methods. 3. Basic points of arc welding. 4. Welding joint. 5. Detailed structure. 6. Special welding joint. 7. Construction, inspection and construction costs. 8. Appendix | 66 |
| 8   | Waseda University Architecture Lecture Notes Showa 17th | Architecture Electrical Construction | Equipment | Kōji Tanishika | 1. Types of indoor electrical equipment and power requirements. 2. Type of wiring method. 3. Precautions for construction. 4. Special room and special equipment | 53 |
|     |      | Mechanical Equipment | Equipment | Ichirō Ōsawa | 1. General 2. Motor 3. Elevator 4. Pumping machine 5. Refrigerator and refrigeration equipment 6. Kitchen and cooking equipment 7. Disinfection and gasproofing. 8. Incinerator 9. Gas | 170 |
| Set | Number | Book | Title | Classification | Instructor/Professors | Table of contents | Pages |
|-----|--------|------|-------|----------------|-----------------------|-------------------|-------|
| IV  | 9      | Waseda University Architecture Lecture Notes Showa 17th | Air Conditioning Method | Equipment | Tokimasa Doi | 1. General 2. Air pollution and cleaning methods 3. Ventilation method 4. Heating method 5. Cooling method 6. Calculation method of the amount of heat received and the amount of heat dissipated in the building 7. Ventilation path 8. Piping and materials 9. Air conditioning equipment | 166 |
|     |        | 9     |       |                | Ichiro Osawa       | 1. Water supply equipment and water usage 2.Water well and source of river 3. Water properties and tests 4.Hydraulic requirements 5.Pump 6.Water purification method 7. Water supply facility based on water supply 8. Water supply piping equipment 9. Faucets 10. Water pipe 11. Indoor fire extinguishing equipment 12.Warm water method 13.Sanitary equipment 14.Trap (deodorant bun) 15. Drainage pipes 16.Indoor drainage 17. Sewage separation method | 204 |
| 10  |        | Waseda University Architecture Lecture Notes Showa 17th | Japanese House Construction | Material and Construction | Masaharu Furutsuka | 1. General 2. Basic 3. Shaft design 4. Roof structure 5. Structure of axis 6. Internal miscellaneous structure 7. External miscellaneous structure 8. Joinery | 169 |
| 11  |        | Waseda University Architecture Lecture Notes Showa 17th | Shrines and Temples Contract Plan and Equipment | Architecture Plan | Kinosuke Sasaki | 1. Introduction 2. Planning 3. Elevation planning 4.Detailed method and structure 5. Conditions of construction planning 6. Ability data (working ability) | 143 |
|     |        | 11    |       |                | Hiroshi Hatori     | 1. Outline 2. Purpose of construction planning 3. Scope of construction planning 4. Conditions of construction planning 5. Ability data (working ability) | 133 |
| 12  |        | Waseda University Architecture Lecture Notes Showa 17th | Sun Light and Lighting | Special Lecture | Koichiro Kimura Motoo Take | 1. Sunshine 2.Solar heat 3. Daylight 4. Lighting | 86 |
|     |        | 12    |       |                | Masafumi Itō       | 1. Introduction 2. Site hygiene 3. Ventilation hygiene 4.Dimensional planning 5. Summary | 98 |
|     |        |       | Sanitation Engineering | Equipment | Koichiro Kimura Motoo Take | 1. Introduction 2. Site hygiene 3. Ventilation hygiene 4.Dimensional planning 5. Summary | 97 |
|     |        |       | Manchuria Architecture | Material and Construction | Inui Hideshima     | 1. The state of Manchuria 2. Material and labor 3. Cold protection structure 4. Heating equipment 5. Housing | 46 |
| 13  |        | Waseda University Architecture Lecture Notes Showa 17th | Western Countries Garden | Special Lecture | Takuma Tono | 1. Emphasis of modern garden 2.Type and format of residential area 3. Home 4. Each part of the house 5. Garden design method 6. Classification according to garden form 7. Classification on the motif of the garden 8. Special garden design method | 108 |
|     |        | 13    |       |                | Akira Miki Shunzo Chiaki | 1. Outline 2. Indoor acoustics 3. Soundproof structure 4. Broadcasting hall building | 47 |
|     |        |       | Architectural Acoustics | Special Lecture | Sadao Kawashima | 1. Vibroacoustics 2. Architectural engineering and vibration | 26 |
|     |        |       | Architectural Vibration | Special Lecture | Editors by Waseda University Press | 1. General 2. Utility area 3.Architectural line 4.Height and vacant land 5.Structural equipment 6.Fireproof district 7.Special building 8.Artistic area 9.Exclusion 10. Heating equipment 11. Construction execution procedures | 49 |
|     |        |       | Architectural Regulations Outline | Implementation Plan | Matsunosuke Tatsui | 1. Features of Japanese-style garden 2. History of Japanese-style garden 3. Classification of Japanese-style gardens 4. Residential garden 5. Japanese-style garden design 6. Landscaping materials 7. Landscaping section | 50 |
| 14  |        | Waseda University Architecture Lecture Notes Showa 17th | Housing and Housing Policy | Architecture Plan | Katashi Yasuda | 1. History of theater building 2. Trends in modern theater building 3. Theater construction planning | 109 |
|     |        | 14    | Theatre and Cinema | Architecture Plan | Motoo Take | 1. History of theater building 2. Trends in modern theater building 3. Theater construction planning | 108 |

(Continued)
| Set | Number | Book | Title | Classification | Instructor/Professors | Table of contents | Pages |
|-----|--------|------|-------|----------------|-----------------------|------------------|-------|
| 15  |        | Waseda University Architecture Lecture Notes Showa 17th 15 | Tearoom Factory Building | Special Lecture Architecture Plan | Masao Isobe Masao Horaoka | 1. Introduction 2. Tearoom building 3. Composition of tearoom 4. Tearoom Lighting 7. Ventilation 8. Heating 9. Sanitary equipment 10. Fire protection equipment 11. Transportation equipment 12. Hazard prevention equipment 13. Air defense facility 14. Special equipment 15. Summary | 35 83 |
| 15  |        |       | Power Station Building Hotel and Restaurant | Architecture Plan Architecture Plan | Asahi Kagawa Kyōji Yoshida Tokiji Chūzenji | 1. General 2. Thermal power station 3. Hydropower power station | 79 |
| 15  |        |       | Office Building | Architecture Plan | Yoshikyo Satō | 1. Overview of office building 2. Architectural planning 3. Floor planning 4. Design of building details 5. Elevator 6. Fireproof evacuation equipment 7. Structural planning 8. Incidental equipment 9. High-rise buildings and urban problems | 50 |
| 16  |        | Waseda University Architecture Lecture Notes Showa 17th 16 | School Building | Architecture Plan | Masafumi Itō | 1. Introduction 2. Basic design 3. Partial design 4. Equipment design 5. Construction cost finance | 48 |
| 16  |        |       | Library | Architecture Plan | Kenji Imai | 1. Introduction 2. Overview of history 3. General library problems 4. Plan 5. Details of each room | 71 |
| 16  |        |       | Physical Education Facility Drilling Building Hospital Building | Architecture Plan Architecture Plan Architecture Plan | Kōchi Sugiura Asahi Kagawa Gennosuke Ōsawa | 1. Indoor sports facility 2. Outdoor sports facility | 77 46 |
| 16  |        |       |  |  | 1. General 2. Design of drilling architecture | 63 |
| 16  |        |       | Warehouse | Architecture Plan | Katsunari Kitamura | 1. General 2. General plan 3. Store planning 4. Inside of store planning 5. Daylighting and lighting 6. Incidental equipment | 85 |
| 16  |        |       | Bank | Architecture Plan | Takeo Yasui | 1. Concept of shed and warehouse 2. Concept of cargo 3. Concept of cargo handling equipment 4. Shed 5. Warehouse 6. Special warehouse | 59 |
| 16  |        |       | Airport | Architecture Plan | Fumina Kiyota | 1. Basic considerations for airport planning 2. Airport planning | 73 56 |
| 16  |        |       | Air Defense Facility | Architecture Plan | Kasuke Hishida Ken'ichi Usui | 1. Introduction 2. Air defense monitoring communication alarm 3. Light control 4. Camouflage 5. Fire protection 6. Bulletproof 7. Gasproofing 8. Shelter facility | 80 |
Architectural Acoustics:
The Shōwa 17th version has two additional pages of summary on this theme, which cover audible sounds, volume, language clarity, etc. Chapter 2 is renamed, but the contents remain largely the same, except that the last section on noise prevention is integrated into Chapter 3. The Shōwa 17th version is more focused in terms of content allocation. Meanwhile, it also adds a new chapter on the architecture of the broadcasting center. I will attempt to analyze the underlying rationale in connection with the social context.

Architectural Regulations Outline:
Compared with the Shōwa 4th version, some contents from two different chapters are combined into one chapter, and a new chapter of fire-resistant areas is added.

Housing and Housing Policy:
Versions before Shōwa 15th are more focused on the teaching of equipment related contents. The newer versions also include that of design related.

Theatre and Cinema:
The design part from the Shōwa 4th version only introductory discusses the stage. The Shōwa 17th version, instead, elaborates on the comprehensive functional design of the whole theater.

Factory Building:
The versions from Shōwa 4th and Shōwa 15th are the same. They focus on the detailed due diligence when selecting the factory's location and the explanations of each different tectonic component. More attention is devoted to the design and construction of the building itself, and less towards the functions such as lighting and construction equipment, which only take up 25 pages. The Shōwa 17th version abridges the former part of design and construction into a 15-page brief summary in the first two chapters. It diverts the focus to the elaboration of different equipment types and how to select them. This mainly reveals the Lecture Notes' inclination towards tectonic equipment.

Hotel and Restaurant:
A single chapter 2 from the Shōwa 4th version is enriched and expanded into three chapters of detailed elaborations.

Office Building:
The fireproof evacuation equipment part is newly added compared with the Shōwa 4th version.

School Building:
The versions from Shōwa 4th and Shōwa 15th are the same. They focus on the teaching of building functions and spend 11 chapters on the school architecture. All of the contents are consolidated into a single chapter in the Shōwa 17th version, and the remaining chapters turn to discuss tectonics and equipment.

Store:
Chapter 6 and Chapter 7 from the Shōwa 15th version are consolidated into the new Chapter 6.

The most significant additions were Manchurian Architecture, Wooden Structures, and Sports Facilities. Again, design-related courses remained mostly intact. Three courses were deleted, but when we looked into the specific details, we found that the focus on design was adjusted. More course materials were dedicated to tectonics and equipment, which in effect increased the proportion of education in tectonic equipment.

3.4. Summary and additional information
The Waseda Architecture Lecture Notes were first published in October 1929 and last in March 1944, and were issued for the original edition and 26 times. The original edition 1, the first edition and the second edition were published 6 volumes included Overview and History, Material and Construction Implementation Plan, Equipment Drawing and Architecture Plan. From the third edition to the final edition were published 18 volumes. The whole education lasted one and a half year for each student. The off-campus students enrolled in the correspondence education can use the Waseda University Library. No diplomas were issued upon completion of the course. Still, the students could choose to take the graduation examinations, and they would automatically become regular Waseda University students if they pass the exam.

The analyses and comparisons above showed that the current volumes were mostly stored at Waseda University, covering the versions throughout Shōwa 4th (1929), Shōwa 7th (1932), Shōwa 15th (1940) and Shōwa 17th (1942). In the first three versions, only “Machinery Equipments” underwent significant changes. Between the last two performances, significant changes were made to subject allocation, and we will address the rationale in the next chapter.

4. Discussion: a review of the contents in the Waseda Architecture Lecture Notes
4.1. Educational background of teachers editing the notes
As we compiled this Table 12 (Waseda University 1942) below, we learned that most teachers at Waseda University were graduates from Tokyo Imperial University and Waseda University at that time. Only a few others had studied abroad. Teachers who studied in American Universities like Cornell University mostly taught Western Gardens, while more traditional and graduates of Japanese elite schools taught Japan-centered courses. This implied that the architectural education conducted at Waseda University during the Shōwa period mostly followed Japanese university education traditions, and were led by Tokyo University alumni like Professor Kōichi Satō.
4.2. Subject allocation of the notes

A further review of the subject allocation of the Notes, based on the comparisons deliberated in section 3.3 of version Shōwa 17th, was summarized in Figure 3 (NAITÔ tachû 1929b), presenting the composition of the lecture notes and the pages dedicated to each subject.

Courses concerning tectonics took up the largest part of the whole notes, while the architecture plan followed, and equipment ranked the 3rd. History of architecture was only covered in Shōwa 17th (1942) edition and took up the smallest percentage.

4.3. Specific content analysis

As summarized above, tectonics related courses constituted the largest part of all the notes. The writings teaching these subjects were also among the most detailed and in-depth. Most of them could be classified into Japanese Home Tectonics, General Tectonic Methods and Tectonic Mechanics. These three categories made up a total of 1547 pages, most of all the subjects. This reflected the particular emphasis that the Japanese architects had placed architectural tectonics, as demands for buildings and structures that were resistant to earthquakes and fires surged during that time. This phenomenon could possibly be attributed to the tragic 1923 Great Kantô earthquake (Japan Architectural Review 1939). This boost got reiterated during Shōwa 15th (1940) and Shōwa 17th (1942) edition, as Japan further implemented a tougher requirement for resistance to earthquakes and fires in buildings (Tano 1943).

The second-largest category of content was architectural design. Most related courses were categorized by the buildings’ functions, as for each type of building serving a specific purpose, the teachers arranged for a separate subject. Within each subject, the notes started with general concepts, and the first one-third of the notes was devoted to floor plans and elevations, and the rest followed the course structures of those of tectonics courses. Depending on the specific function a building serves, the notes elaborated on each component of the building structure’s tectonic purposes and equipment organisation. This teaching method also in part reflected the significance of tectonics and equipment in the architecture education realm. Within the design part of the courses, the subject allocation was mostly consistent.

The third-largest category of content was architectural equipment. The notes went into painstaking detail to discuss and teach the five significant categories of equipment widely present in buildings and structures: hygienic equipment, ventilating equipment, machinery equipment, heating/cooling equipment, and construction equipment.

Another new subject that was added in the Shōwa 15th (1940) and 17th edition (1942) was Wooden Structures. Japan tightened regulations on the use of materials and munitions, which in part led to the architectural trend of saving steel when constructing concrete and steel structures, and the increasing research into how to revolutionize and promote wooden buildings.

5. Conclusion and future work

This article performed a systematic review and analyses of Lecture Notes collected and shelved at Waseda University. The collections were mostly issued in Showa 4th (1929), Showa 7th (1932), Showa 15th (1940) and Showa 17th (1942), and covered six categories of specific subjects: Material and Construction, Equipment, Implementation Plan, Drawing, Overview and History, and Architecture Plan.

Based on the comparisons between available versions from these different years, we concluded that only the subject of machinery equipment underwent significant content modifications throughout the editions. The emphasis on tectonics curriculum was also evident in the Waseda Architecture Lecture Notes published after 1929. This aligned with the booming
Table 12. Educational background of the teachers in Shōwa 17th edition.

| Instructors/Professors | Academic background | Major | Graduated in | Biography |
|------------------------|---------------------|-------|--------------|-----------|
| Kōdō Satō             | Tokyo Imperial University | Architecture | 1893         | Graduated in 1924 |
| Yasushi Tanabe        | Waseda University   | Architectural History · Art History | 1899         | Graduated in 1924 |
| Chūta Itō             | The University of Tokyo | Architecture | 1897         | Graduated in 1929 |
| Kōdōri Kimura         | Waseda University   | Environmental engineering | 1898         | Graduated in 1929 |
| Motoo Take            | Waseda University   | Architectural Design | 1899         | Graduated in 1930 |
| Wajirō Kom             | Tokyo University of the Arts | Architecture · Residential Design | 1899         | Graduated in 1930 |
| Shikasaburō Furōji    | Unknown             | Unknown | 1899         | Graduated in 1930 |
| Kyōji Yoshida         | Tokyo Imperial University | Architectural materials | 1899         | Graduated in 1930 |
| Tsutomo Sakai         | Waseda University   | Architecture | 1899         | Graduated in 1930 |
| Saburō Soshiroda      | Waseda University   | Study on fire prevention and ant prevention of wooden construction | 1899         | Graduated in 1930 |
| Akira Tsuruta         | Waseda University   | Specialized in steel structure and welding | 1899         | Graduated in 1930 |
| Isamu Ishii           | Waseda University   | Architecture | 1899         | Graduated in 1930 |
| Shōji Gotō            | Waseda University   | Civil engineering | 1899         | Graduated in 1930 |
| Kazuo Minami          | Massachusetts Institute of Technology (Waseda University) | Civil engineering | 1899         | Graduated in 1930 |
| Rakurō Asano          | Waseda University   | Architecture | 1899         | Graduated in 1930 |
| Akira Urakami         | Tokyo Imperial University | Architecture | 1899         | Graduated in 1930 |
| Tachū Naitō           | Tokyo Imperial University | Architecture | 1899         | Graduated in 1930 |
| Ryozō Suzuki          | Waseda University   | Architecture | 1899         | Graduated in 1930 |
| Kōji Tanishika        | Waseda University   | Electrical engineering | 1899         | Graduated in 1930 |
| Ichirō Osawa          | Waseda University   | Construction equipment engineering | 1899         | Graduated in 1930 |
| Tokimasa Doi          | Waseda University   | Architecture | 1899         | Graduated in 1930 |
| Masaharu Furutsuka    | Waseda University   | Architecture | 1899         | Graduated in 1930 |
| Kōnosuke Saeki        | Waseda University   | Architecture | 1899         | Graduated in 1930 |
| Hiroshi Hatari        | Waseda University   | Architecture | 1899         | Graduated in 1930 |
| Buichi Kimura         | Waseda University   | Architecture | 1899         | Graduated in 1930 |
| Yūichi Inoue          | Waseda University   | Architecture | 1899         | Graduated in 1930 |
| Masafumi Itō          | Waseda University   | Architecture | 1899         | Graduated in 1930 |
| Inui Hidetsuna        | Waseda University   | Urban planning | 1899         | Graduated in 1930 |
| Takuma Tono           | Cornell University  | Landscape | 1899         | Graduated in 1930 |
| Akira Miki            | Waseda University   | Construction acoustics | 1899         | Graduated in 1930 |
| Shunzo Chiaki         | Waseda University   | Construction acoustics | 1899         | Graduated in 1930 |
| Sadao Kawaishi        | Waseda University   | Landscape | 1899         | Graduated in 1930 |
| Matsuno Katsuki       | Tokyo Imperial University | Landscape | 1899         | Graduated in 1930 |
| Katarō Yasuda         | Waseda University   | Architecture | 1899         | Graduated in 1930 |
| Masao Isobe           | Waseda University   | Architecture | 1899         | Graduated in 1930 |
| Masao Horoaka         | Waseda University   | Architecture | 1899         | Graduated in 1930 |
| Asahi Kagawa          | Waseda University   | Architecture | 1899         | Graduated in 1930 |
| Tokijō Chuzenji       | Waseda University   | Architecture | 1899         | Graduated in 1930 |
| Yoshikyo Satō         | Waseda University   | Architecture | 1899         | Graduated in 1930 |

(Continued)
demand for earthquake-resistant architectural structures in Japan after the Kantō Earthquake.

Changes in Shōwa 15th (1940) and Shōwa 17th (1942) editions were more prominent. While tectonics still took the most considerable portion within the curriculum, two new subjects were introduced, Manchurian Architecture and Wooden Structures.

In conclusion, within the social and historical context of natural disasters and military disputes in the Shōwa period, Waseda University played its significant role as an essential and vital educational institution within modern Japanese architecture education, and proactively responded to the national situation and public calling. Waseda University carried out its mission of cultivating nationally pragmatic talents by flexibly tailoring education contents and purposes to better align with national interests. One of its most significant innovations was to use the Waseda Architecture Lecture Notes to promote correspondence education, the "Invisible School". All of its innovations and revolutions made a substantial contribution to Japanese architectural education in this special context.

A renaissance of architectural education surged post World War II, and within this wave various types and categories sprouted and developed. In our future work, we plan to analyze the educational contents of Waseda University Department of Architecture, and the Waseda Technical School in post-WWII education reconstruction.

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