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The Current status and outlook of facility development at ICU

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The number of key facilities that ICU and its high school own and manage counts 41 buildings (excluding faculty/staff residences) and a total floor area of 116,000 m^2 on the premises of 620,000 m^2. Along with our spacious and lush campus, the buildings that have supported our history since the founding of ICU comprise an important part of ICU's identity. After 65 years since the foundation of the university, however, signs of deterioration and the need for repair have become evident in some of the buildings. In addition, we are also faced with the need to accommodate a growing number of students and changing standards of research/education facilities.

Facility development is a major concern for current ICU students as well as for potential students who wish to study at ICU in the future. For the alumni too, the future of the campus and its buildings, where they spent unforgettable moments, is something they cannot be indifferent about. Here, I will explain the status of facility development so far and an overview of the facility development plan approved at the Board of Trustee meeting held in July 2019.

Background

Deterioration of the University Hall, the Diffendorfer Memorial Hall East Wing (D East Wing) and some other older buildings on campus has become evident in recent years. To address these problems, the Campus Grand Design (CGD) project was launched in 2014, succeeding the previous Campus Master Plan. After thorough screening and review by the Board of Trustees and representatives of faculty and staff, Nihon Sekkei, Inc. and Kengo Kuma and Associates Joint Venture was selected from three candidate design offices to undertake the design works for CGD. Consideration and planning of various facility-related matters were started under the project. Some of the items considered are listed below.

- Future arrangement of buildings on campus
- Signs
- Lighting
- Business Continuity Plan (BCP)

- Campus security
- New University Hall
- New Physical Education Facilities
- New Diffendorfer Memorial Hall
- 2 New Dormitories
- Residences
- High School Buildings and Dormitories
- Renovation of the University Chapel
- Upgrading of infrastructure
- Environmental architecture, etc.

The consideration results for Phase1 and Phase 2 of CGD were reported in 2015 and 2016 respectively, and outline of the CGD plan was announced on the ICU official website (https://www.icu.ac.jp). According to the plan, the Momi House, Maple House and the new physical education facilities were constructed. In addition, special high-voltage lines were constructed and the chimney of the Central Power Station (CPS) was dismantled as part of infrastructure upgrade of the campus.

In CGD's initial long-term scheme of main campus buildings, it was assumed that the University Hall, Science Hall, and the D East Wing needed to be reconstructed due to age deterioration. This was because, concerning aged reinforced concrete (RC) buildings, it was generally believed in the construction industry at that time that the building life of RC buildings lasted only up to 60–70 years after construction. However, when we sought advice from architectural experts in 2016, we learned that the life of RC buildings may in some cases be extended longer than generally expected. As a matter of fact, by this time, there were some actual examples of aged RC buildings with historical value that had been successfully repaired and preserved. Moreover, in response to the announced CGD plan, we had received numerous opinions demanding the preservation of the older buildings, particularly the University Hall and the D East Wing. We therefore decided to consider whether the University Hall, Science Hall and the D East Wing could be repaired and conserved for continued use.

While our policy for the three main buildings of University Hall, Science Hall and the D East Wing was changed, the other consideration results and plans that came out of the CGD project will be utilized and executed as appropriate. In the CGD's long-term scheme, several more buildings, including additional dormitories, faculty/staff residences and an outdoor theatre, are planned to be constructed other than the three main buildings noted above and the Momi House, Maple House and new physical education facilities that were constructed according to the CGD plan. The plan for constructing new faculty/staff residences, however, needs to be significantly changed due to related government regulations and other problems. As for the additional dormitories and outdoor theatre, no concrete plans have been developed yet.

Basic policies

Consideration/planning of future facility development will be based on the following three basic policies.

1. Facilities shall be developed to maintain and ensure a safe and enriched environment for liberal arts education and research
2. ICU's characteristic small-sized education is largely dependent on investment returns from endowments. Other use of funds from the endowment must be avoided as much as possible. This means that expenses for facility development need to be restrained to the extent possible. Construction of new buildings involving huge costs will be avoided wherever possible and instead, extended use of existing facilities by repair is encouraged.
3. All ICU students from the inaugural graduates (CLA 1) to the current students (CLA 67) have studied in the same buildings on the same campus. This is a fact that makes it possible for all generations to share the founding philosophy and traditions of ICU, providing an important basis for the identity of ICU students and alumni. Therefore, facilities with historic and cultural values should be repaired, conserved and utilized to the extent possible.

Facility development completed to date

Momi House and Maple House (completed in 2017)

Student dormitories at ICU play an important role to provide a place where diverse students, both Japanese and international students, with different language, cultural and religious backgrounds, characters, and ideas can live together and engage in repeated dialogues to broaden their perspectives and possibilities. ICU has signed student exchange agreements with 74 partner institutions in 24 countries and regions (as of April 2019). These partnerships were largely driven by the on-campus dormitories ready to accept international students (155 international students are using the dormitories as of April 2019). With the increasing importance of student dormitories and rising number of dorm applicants significantly exceeding the dorm capacity, Momi House and Maple House were constructed to accommodate the increasing needs. The ground area that could be used for dormitory construction was limited from the viewpoint of protecting natural environment and historical sites, but at the same time a large capacity needed to be secured in order to keep the dorm fees down. As a result, Momi House was built as a 7-story building and Maple House a 5-story building. The first floor are comprised of seminar rooms, the Wisteria Hall (common living and dining area), a Japanese-style tatami room

“Sansan” and other rooms, which can be used not only by the dorm residents but commuting students as well. These rooms are used for seminars and workshops organized by the students and student-alumni exchange events. The upper floors are residential areas with 32 residents per floor, each an autonomous community proactively managed by the resident students in accordance with the tradition of ICU dormitories.

The new dorms were constructed and are now managed based on advice from many alumni members including an alumni group established to “Consider the Future of Education Dormitories.”

New physical education facilities (completed in 2018)

The name of our older gymnasium completed in 1972 is “Physical Education Center B.” This is because another gymnasium which was to be named “Physical Education Center A” was supposed to be built in the original plan. Thus, the Central Locker Building was named “central” based on the assumption that it would be positioned in between Physical Education Centers A and B. In fact, our former Central Locker Building had a door on the second floor that was supposed to be connected to Physical Education Center A, which was planned to have a basketball court qualified for official games. Compared with the planned Physical Education Center A, the existing Physical Education Center B was smaller, mainly designed for volleyball games. This is why the ball court of Physical Education Center B was called “V Gym.”

Against the initial plan, only Physical Education Center B with the smaller ball court was constructed. This caused various problems not only to P.E. classes but to extracurricular activities as well. For instance, official basketball games could not be held at ICU. In addition, we were faced with a shortage of indoor facilities available for extracurricular activities, as an increasing number of clubs and groups (contemporary and traditional dance clubs, etc.) were demanding their use. On top of that, the indoor swimming pool had been out of use since the water treatment device broke down in 2015. The completion of the new physical education facilities in 2018 finally realized the 50-year-old plan to build Physical Education Centers A and B, and also solved the pressing problems mentioned above. The new physical education facilities were built on a total construction area of 3,600 m^2. The roof was designed in an arch to harmonize with the surrounding environment. This design ensured sufficient ceiling height required for the sports games while giving it a less overwhelming appearance by keeping the height of the exterior walls lower. Although arch roofs require a complex structure and therefore tend to become heavy, we adopted a wooden structure rather than steel to reduce weight and load on the support structure, thereby reducing cost. Adoption of a wooden structure was also advantageous in terms of funding as we won a subsidy for “Projects for Sustainable Buildings (Wood Structure Promotion Type)* provided by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT).” The construction costs were financed by a 20-year fixed low interest rate loan to level annual financial loads and to avoid using large amounts from endowments.

In order to construct the new swimming pool, the tennis courts were moved to the southern side of Physical Education Center B and were covered with a roof. Now the tennis courts can be used at all weather conditions and for P.E. classes on rainy days.

*Unofficial translation

Large-scale repair of high school buildings (repaired in AY2017 and 2018)

After 40 years since the foundation of ICU High School, some of the facilities were showing signs of deterioration. Seismic reinforcement works had been completed a while ago, so a large-scale project was carried over three years to repair other parts of the facilities including classrooms in the N Building, toilets in the S Building and the Entrance Lobby. As for the classrooms, lighting windows were enlarged to let in more light from the hallway and lighting was switched to LED. Student lockers were replaced with new ones with support from students' parents. On the east side of the S Building, a student lounge was provided for students to get together to have a chat or for events and a study hall where students can focus on studying.

MacLean Avenue (repaired in AY2018)

Called by the nickname of "Runway," MacLean Avenue is endeared by everyone at ICU. It was in need of a full-scale renovation due to severe deterioration of its pavement. Only the asphalt layer had been repaired in previous renovations but the mechanically stabilized crushed stone layer, crusher-run layer and the subgrade were all starting to lack bearing capacity. A full-scale structural repair work was conducted for the full length (900 meters back and forth from the main gate to the bus rotary). The subgrade strength of MacLean Avenue was CBR (California Bearing Ratio)* 2, requiring some kind of reinforcement: either stabilization using a fixation agent, replacement of the subgrade soil, or thickening of the pavement layer. This time we chose to thicken the pavement to avoid the need to discard huge amounts of disposal soil. As a result, the new road surface became 8 cm higher than before.

*CBR is a measure of the subgrade strength used in the design of roads and pavements.

Seabury Memorial Chapel (repaired in AY2018)

Completed in 1959, Seabury Memorial Chapel is now 60 years old. It was in a condition requiring repair and renovation. Fundraising for Seabury Chapel was started by an alumni group (CLA 16), which led to the repair and renovation project in 2018. The project started with a seismic diagnosis. Upon confirming that there was no problem with its earthquake resistance, the air conditioning system was renewed (the older air conditioners were replaced with new ones so that the chapel and meeting rooms can be air conditioned separately), the interior was renovated, and air vents were installed to improve ventilation. In addition to the 3 million-yen donations from CLA 16 alumni (as of the end of

AY2018), we received a lot of donations for the Chapel from other alumni, church members, and ICU services, which have amounted to 7.4 million yen altogether.

Future facility development plan

University Hall

The ICU University Hall is a RC structure whose construction was started in 1941 and completed in 1943. After half a century since its construction, discussions on the reconstruction of the University Hall was started in the 1990's when the remaining building life was thought to be running short based on the then commonly believed life span of RC structures. Although reconstruction of the University Hall was once approved by the Board of Trustees and Board of Councilors in May 2000, the policy was changed to extend the life of the existing building by repairing the external walls and reinforcing seismic resistance, etc. This change in policy was made based on expert advice and was at first meant to be only a tentative measure to prolong the life of the current building until reconstruction could be started.

Later on, when it was becoming widely understood that RC structures could be used quite longer than generally believed depending on the building's condition and use environment, we sought advice from experts again in 2016. We were told that there was good possibility that the building's use life could be extended longer than generally believed if repair works were done properly. The next year in 2017, we examined the seismic performance of the University Hall based on concrete diagnosis. The results were fine, indicating no serious problem in the frame structure or seismic performance. The reasons behind this positive result may be that the University Hall was initially constructed as a military facility to house the Mitaka Research Institute of the Nakajima Aircraft Company, and since it had been used as a university building, the load placed on the building was relatively low, as the population density and operating rates were lower than normal office buildings. Originally built as a research institute of the Nakajima Aircraft Company, then later renovated based on the design by architect W.M. Vories, who drafted the campus plan of ICU at the time of its establishment, the University Hall holds significant value as a historic building and also as a symbol of ICU's history and tradition as all ICU students from the inaugural graduates to the current students have studied in the building. It should be repaired for sustained use if there are no technical problems and the costs are within an acceptable range.

However, the water supply and drainage, sanitary systems and air conditioning systems which are showing evident signs of deterioration, will be fundamentally renovated after the construction of a new building (mentioned below) is completed.

Science Hall

After half a century since its completion in 1978, deterioration was becoming evident in the Science Hall, too. The Science Hall will undergo a full-scale renovation. During renovation, laboratory equipment and other equipment specific to natural science education and research will need to be transferred to somewhere else, which will require specific expenses including tuning of the lab equipment. Therefore, it would be best to relocate the equipment just once and for good and make the relocation destination a permanent facility for natural science education and research. We are therefore planning to renew the current Science Hall as a education facility rather than limiting its use to natural science fields.

Construction of a new building

We need to construct a new building for a number of reasons: to accommodate the increasing number of enrolled students; to allocate necessary classrooms and student/faculty support offices; to secure space to relocate natural science facilities for the planned renovation of the Science Hall, and also to secure classrooms and offices during the renovation of the University Hall and Science Hall.

As for the size and functions of the new building, a basic plan will be prepared by the end of AY2019. We are hoping to select the design office and construction company during AY2020 and complete construction of the new building by the end of AY2021.

Diffendorfer Memorial Hall East Wing

Completed in 1958, Diffendorfer Memorial Hall East Wing (D East Wing) is now 60 years old. It is about time the building underwent a large-scale renovation. D East Wing is one of the representative buildings of modern Japanese architecture as evidenced by its selection as a “Building of the Modern Movement in Japan” by DOCOMOMO Japan (Japanese chapter of the International Committee for Documentation and Conservation of Buildings, Sites and Neighborhoods of the Modern Movement). Like the University Hall, D East Wing which remains mostly unchanged since its completion 60 years ago is a valuable place where alumni can recall their campus life.

To consider policies for the repair and renovation of D East Wing with a view to continued use of the building into the future, a Committee for the Repair of D East Wing (chaired by the Dean of Students) was established at the AY2018 Board of Trustees meeting. One of the reasons that D East Wing was selected by DOCOMOMO Japan was because the building was designed by incorporating students’ requests. Paying respect to this original spirit, opinions from not only faculty and staff but students will also be considered in the renovation planning process.

On campus faculty and staff residences

ICU's on-campus residences have played an important role as a place for dialogue between faculty and students as well as a place to live for faculty.

Moreover, some of the residences are historically valuable as they were designed by such significant architects as Vories and Raymond. However, more than 50 years have passed since they were built and many of them are suffering severe deterioration. It is about time we considered reconstruction of these housings. New construction of new detached housings, however, will be deemed as an act of development by construction-related laws and regulations, which will give rise to requirements such as paving and widening the residential area roads, development of additional infrastructure, provision of certain pieces of land to Mitaka City and freeing the campus to the public. The idea of building detached housings, therefore, has turned out to be totally unrealistic. We are planning to repair and renovate the existing residences to the best possible extent and build collective housings with less statutory regulations, to meet the increasing needs for on-campus residences.

Repair of ICU High School Dormitories

Accepting students from foreign countries is an important mission of ICU High School, and thus its dormitories are an important facility for accommodating students whose parents live overseas. After 40 years since completion, however, many of the dorm's facilities are going out of order. The dorms will be renovated over the two years of AY 2019 and 2020 to ensure a more comfortable and pleasant environment for their residents. All five of the dormitories will be renovated in order including the First Women's Dormitory which is now closed. Seismic diagnosis has also been conducted before the start of the renovations to confirm there are no problems with the dorms' seismic performance.

Taizansō

To preserve one of Japan's registered tangible cultural properties and to ensure the safety of students' activities the front gate and Kofukyo building were repaired in AY2017 and the machiai teahouse including its gate and the storehouse were repaired in AY2018. Repair of the carriage shed is planned for AY2019.

The bicentennial anniversary of the birth of Takeshiro Matsuura was celebrated last year, which attracted renewed attention to the 19th-century explorer and author. The famous "Ichijo-jiki" (one tatami mat) room in the Kofukyo building was designed and built by collecting old pieces of wood from across Japan, some of which date back to the Hakuho Era (late 7th century). The original room

is not open to the public for preservation reasons, but an elaborate replication of the “Ichijo-jiki” room has been created and exhibited at the ICU Hachiro Yuasa Memorial Museum. It offers a special moment for exploring the tiny but immeasurable space that is usually inaccessible.