

Spiraling Academia

— A Memorandum for the Design of the New IPMU Research Building

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As the design of this building progressed, it eventually became apparent that it was associated with Italy in various ways. When you enter a big Hall, the central space in this building, and look back towards the north side, your eye will be caught by a glass box the size of a room hanging from the ceiling. This is a hanging courtyard, named “the Patio.” The purpose of this unfamiliar architectural element is to bring light into the Hall, as it has little direct connection to the outside. Sunlight reflected from the walls of the Patio fills the Hall; together with light from the other windows that open to the sky, the Hall is illuminated in sunlight. A traditional patio is often decorated with flowerpots and covered in picture tiles. Likewise, the IPMU Patio will be covered in mosaic tiles – a motif related to astronomy was discussed with Prof. Aihara, Deputy Director of IPMU. From the various options suggested by Prof. Aihara, we chose the sketch of the constellations depicted in the book, *Sidereus Nuncius* (published in 1610) by the father of modern

astronomy, Galileo Galilei (1564-1642). With the courtesy of Kanazawa Institute of Technology, we have been able to transpose Galileo’s sketch of Orion Nebula and Praesepe in blue ceramic paint (the circle on this sketch is my intervention) on the tiles of the Patio. I also learned during the selection of this work that the construction year of this building – 2009 – was coincidentally the 400-year anniversary of Galileo’s astronomical observations by telescope. I thus decided to engrave Galileo’s quote, “The universe is written in the language of mathematics” on the entrance side of the central pillar in the Hall (which I call “the Obelisk”). The quote was suggested to me for its straightforward representation of the philosophy behind the integration of physics and mathematics at IPMU.

IPMU in the context of Kashiwa campus

It is probably best to begin by starting with an explanation of where this building is located on



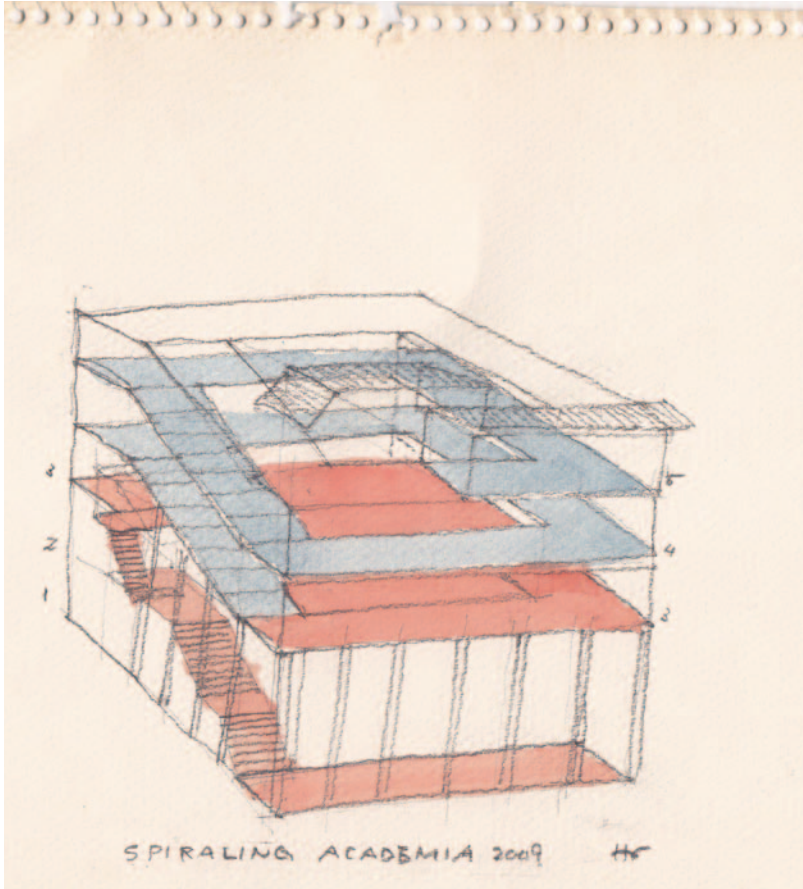
A courtyard “the Patio” is hanging over the Central Hall
 Photo: Toshiharu Kitajima

the Kashiwa campus. IPMU stands facing “the Promenade” running East-West through the campus, in line with the other department buildings. Although it has not been clearly stipulated, there is a rule concerning the buildings facing the Promenade. First of all, the south wall of all the buildings must be lined up along the Promenade and a colonnade must be provided underneath. The roofline is also set to a uniform height of approximately 31m. Exposed concrete is the main architectural material used for the exterior walls. With the abovementioned conditions, it would have been impossible to provide the gathering space encircled by individual offices (as requested by the IMPU researchers) if the roofline

was to be set at the height of 31m. So I may have broken the rules just a bit here. However, a steel pergola was set on top of the roof in order to try to make up for this shortage of height.

Although it may seem to be just one building among a row of buildings, it should be clearly stated that the IPMU building holds a special place on the Kashiwa campus. The road stretching from the Tsukuba Express line Kashiwa-no-ha campus station to Kashiwa station, bordered by rows of Zelkova trees, is one of the main streets in the Kashiwa-no-ha area. A little after this road passes the Customs Training Institute and reaches the T-shaped crossing in front of the campus, the road curves a little to the

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A schematic sketch of SPIRALING ACADEMIA
Illustration: Hidetoshi Ohno

west. Here, you will see the pergola straight in front of you on the road, beyond the forest of the campus (see a picture on p. 9). This building thus lies on axis with the scenery of the district, and establishes one of the representative views of Kashiwa campus. The pergola is a necessary element for this purpose as well.

A space for dialogue

The ideal institute as conceived by the IPMU researchers involved individual offices encircling a central hall where the researchers could gather together and an exchange of academic ideas could occur at any time. I was deeply impressed by this ideal. This ideal claims that the university should be an *academia* that holds dialogue at its foundation. However, the universities we work at today have somehow come to be *academic factories*, composed of lecture halls, individual rooms, and laboratories where only unidirectional communication in the

form of lectures are given from the professor to the students. I felt as though the IPMU researchers' passion towards a space of dialogue was a clear objection against the contemporary idea of a university's facilities. We made various studies with this concept for a new university building, and concluded that a "house," rather than the current trend of a "factory," was the ideal solution. The final structure of the building resulted in research support facilities on the first and second floors and individual offices atop, encircling the Hall.

I have defined the space as a "Hall," however, I could perhaps call it an "urban plaza" as well – for, most traditional "urban plazas" of the world have been places where people of various backgrounds gather to exchange things and knowledge. With this concept established, we can now move to how the literal metaphor of the "urban plaza" can be transformed into an architectural form. The solution we came up with was a "spiral space" combined with a "crossing of diverse views."



Left: Aizu Sazae-do in Aizu-Wakamatsu City
 Photo: Akihiro Yoshida
 Right: Guggenheim Museum in New York
 Photo: Hidetoshi Ohno



Spiral space

The individual offices encircling the “urban plaza” of the Central Hall is arranged in a spiral fashion. To describe this in more detail, the rooms are arranged around the circumference of the square building, with one row of rooms on one side of the square lifted up diagonally one floor. In other words, by going up the gentle slope of stairs from one side of the building to the other, you can move up or down one floor. Thus, by looping around the building three times you can spiral up and pass along all three floors of offices. This structure spatially realizes the equality of all the members of the research institute, and because your awareness is constantly drawn towards the central Hall, it reinforces the centrality of the Hall. This spiral structure actually begins with the colonnade along the Promenade. From the colonnade you go up the grand staircase to the second floor entrance, following the stairs curving up the exterior wall to the third floor, which

connects to the rows of individual offices and finally reaches the pergola on top of the roof.

Spirals periodically appear in architectural history as well. To begin with – to mention an Italian example once again – the name of the all-around genius Leonardo da Vinci (1453-1519) first comes to mind. He is said to have found an enormous possibility in spirals, and is thought to have invented the idea for a helicopter with a spiral rotary vane, the screw-pump (also said to have been Archimedes’ idea), and, in terms of architecture, he is said to have been involved in the design of the double spiral staircase in France’s Chateau de Chambord. Spirals also appear in pre-modern Japan, in an architectural style called the *Sazae-do*, or turban shell hall. Because one of the characteristics of Japanese traditional architecture is that it did not develop vertically, this is an unusual example. During the Edo period, many buildings in the Kanto and Tohoku regions were built using the *Sazae-do* style. The most famous and still existent



A spiral structure of the IPMU building can be clearly seen from this side.
Photo: Toshiharu Kitajima

Sazae-do style can be found in Aizu Wakamatsu City, Fukushima Prefecture, in a building nicknamed “Aizu Sazae-do” (officially named “Entsu Sanso-do”). Thirty-three Kannon (Buddhist deity of mercy) sculptures are set along the double spiral corridor (where you can go up and down through different routes), and the worshipper can make their rounds to all thirty-three sculptures in turn. In other words, it provides an instant pilgrimage. There are many more examples in the twentieth century, one of the most representative being Frank Lloyd Wright’s (1867-1959) Guggenheim Museum (1959). Spirals likely hold the power to create the experience of unfolding space as it reaches infinitely upward, and have thus continued to capture the hearts of many an architect and craftsman across the world.

Architecture as a chain of places

The “urban plaza” at IPMU is characterized by its spiraling line of movement, complemented by a

“crossing of diverse views.” I believe architecture is a device that offers a framework for human-human relationships. Through the group of windows opening out towards the Hall pierced by the spiraling corridor, through the hanging Patio, through the seminar rooms set in the eastern corner of the hall (the fourth and fifth floors, which have been named “the Balconies”), the multitudes of researchers’ activities in the various places located in diverse directions and heights will become visible to each other. The residents of IPMU will thus become involved in each other’s activities, and will learn to realize themselves as members of their academia. I also believe architecture is a device that provides a framework for human-nature relationships. Those who come to visit this building will be met with new and unfamiliar views of the Kashiwa campus and the landscape surrounding it. From the Loggia, you are met with a view of a series of treetops lining the road, from the grand staircase you see the pavement of the Promenade stretching out below, from the



The IPMU building as seen from one of the main streets in the Kashiwa-no-ha area.
Photo: Toshiharu Kitajima

Amphitheater on the rooftop you get a panoramic view of Kashiwa-no-ha Park, from the stairwell between the second and third floors you can see the massive void of the Institute for Solid State Physics building – looking at these familiar landscapes from different heights and directions will make these views appear in different contexts and meanings.

Views give character to a place. In a respect, this building is composed of a chain of characteristic places. This kind of spatial structure is something that cannot be found in the Italian Renaissance and is instead a characteristic component of Japanese architecture and gardens.

It may be an unmerited anticipation – or rather, a wishful fancy of an architect – but I am secretly hoping that when the researchers at IPMU construct their conception of the universe, and when they tackle its mysteries, this building would have given some sort of clue to their thinking.



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