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# Status of Seismic Retrofitting at Osaka University



September 2019



For school facilities, the **Is value** must be **0.7 or higher** in accordance with the Structure Design Guideline for School Buildings written by Educational Facilities Development Technology Study Group.

The fourth five-year plan to improve the facilities of national university corporations, etc. (AY2016 to AY2020) (Ministry of Education, Culture, Sports, Science and Technology) also aims to promote retrofitting to extend the service life of buildings while taking into account the enhancement of earthquake-resistant measures and disaster prevention functions in order to offer safe and secure education and research environments.

## ■Explanation about the seismic capacity

### Is value (seismic index of structure)

This is an index to assess the structural seismic capacity of buildings. The higher the Is value, the higher the seismic capacity.

### Buildings constructed before 1981

Buildings that were built in accordance with the standards before the New Seismic Design Code (which came into force in 1981) and school facilities with three or more stories and a building area of 1,000 m<sup>2</sup> or more must undergo a seismic diagnosis. Seismic reinforcement must be conducted if necessary.

## ■Seismic capability rate

The Seismic capability rate at Osaka University is **98.0%**. (as of May 1, 2019)

Refer to the following URL for details.

[http://www.mext.go.jp/a\\_menu/shisetu/kokuritu/\\_icsFiles/afiefieldfile/2019/08/30/1317922\\_1.pdf](http://www.mext.go.jp/a_menu/shisetu/kokuritu/_icsFiles/afiefieldfile/2019/08/30/1317922_1.pdf)

### Buildings constructed in 1982 or later

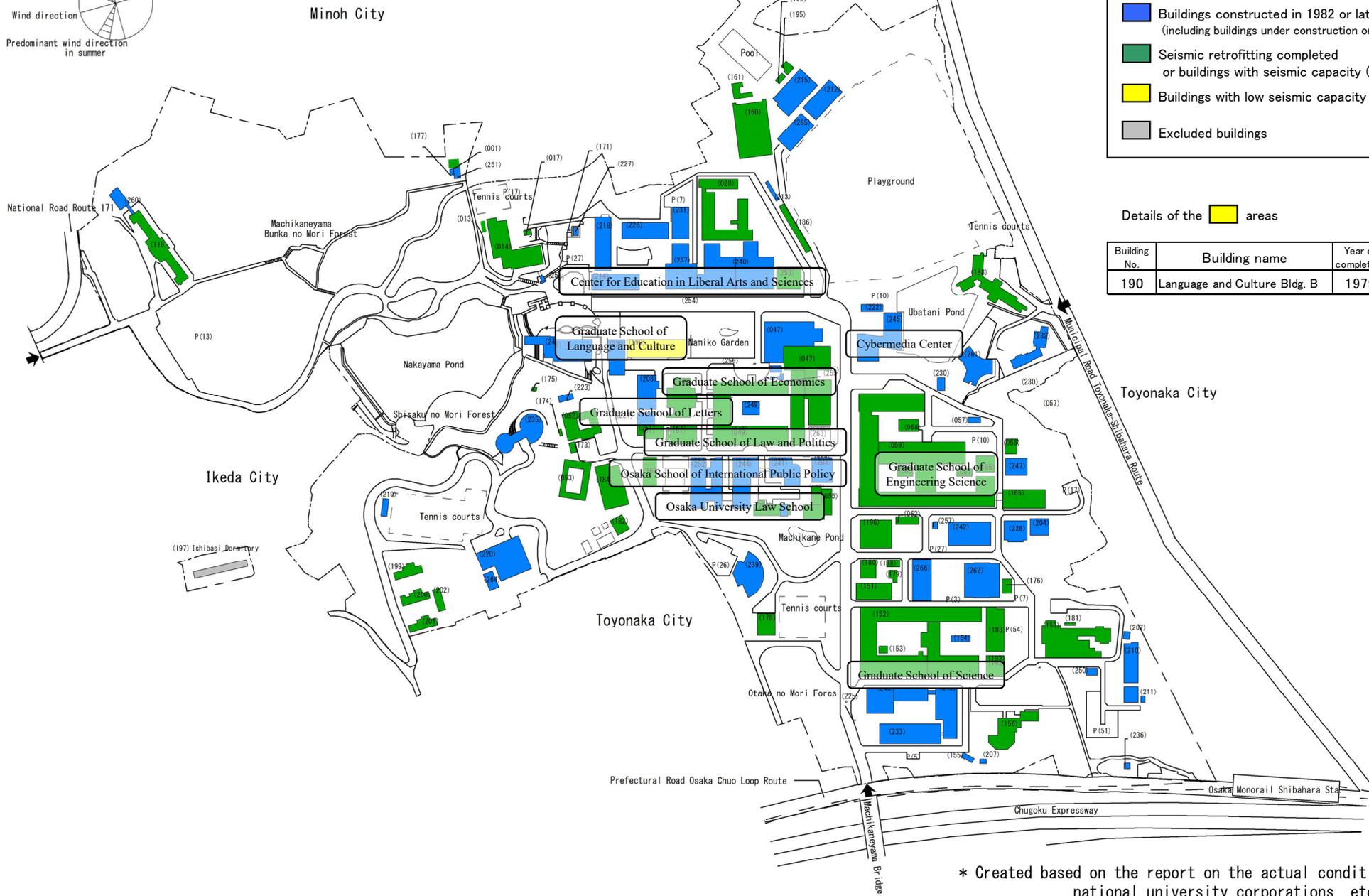
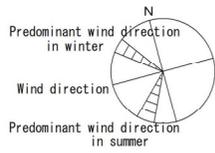
The buildings were built in accordance with the New Seismic Design Code (which came into force in 1981), and their seismic capacity is guaranteed.

### Small buildings, etc.

Small buildings, etc. include small buildings such as warehouses and garages as well as buildings to be demolished, etc.

\*Excluded from seismic capability rate

# Map of the Seismic Retrofitting Status of the Toyonaka Complex



**Legend**

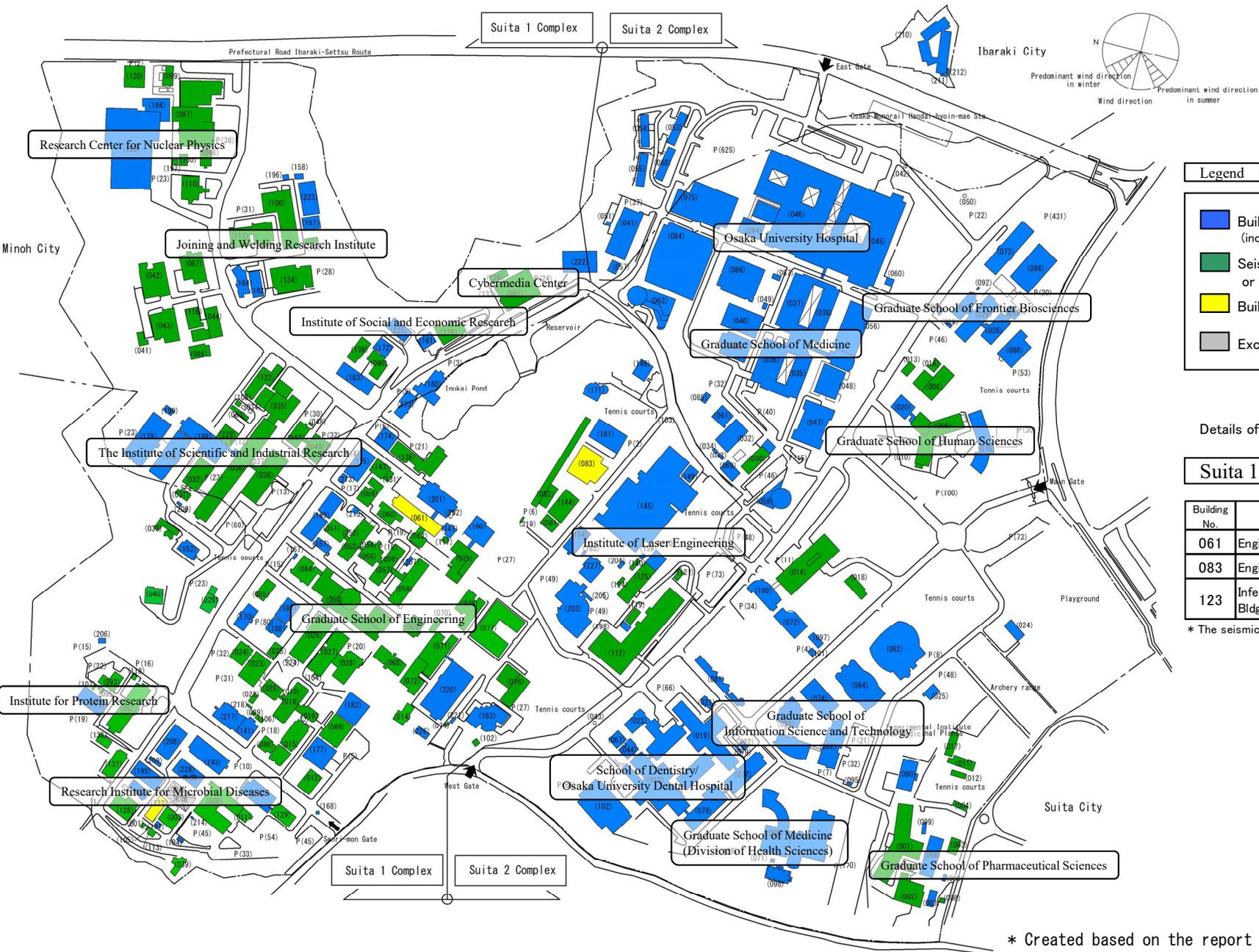
- Buildings constructed in 1982 or later (including buildings under construction or to be constructed)
- Seismic retrofitting completed or buildings with seismic capacity ( $I_s \geq 0.7$ )
- Buildings with low seismic capacity ( $I_s < 0.7$ )
- Excluded buildings

Details of the  areas

Building No.	Building name	Year of completion	Structure	Area	Is value
190	Language and Culture Bldg. B	1979	R4	3,650	0.65

\* Created based on the report on the actual conditions of facilities of national university corporations, etc. (as of May 1, 2019)

# Map of Seismic Retrofitting Status of the Suita 1 and 2 Complexes



## Legend

- Buildings constructed in 1982 or later (including buildings under construction or to be constructed)
- Seismic retrofitting completed or buildings with seismic capacity ( $I_s \geq 0.7$ )
- Buildings with low seismic capacity ( $I_s < 0.7$ )
- Excluded buildings

Details of the ■ areas

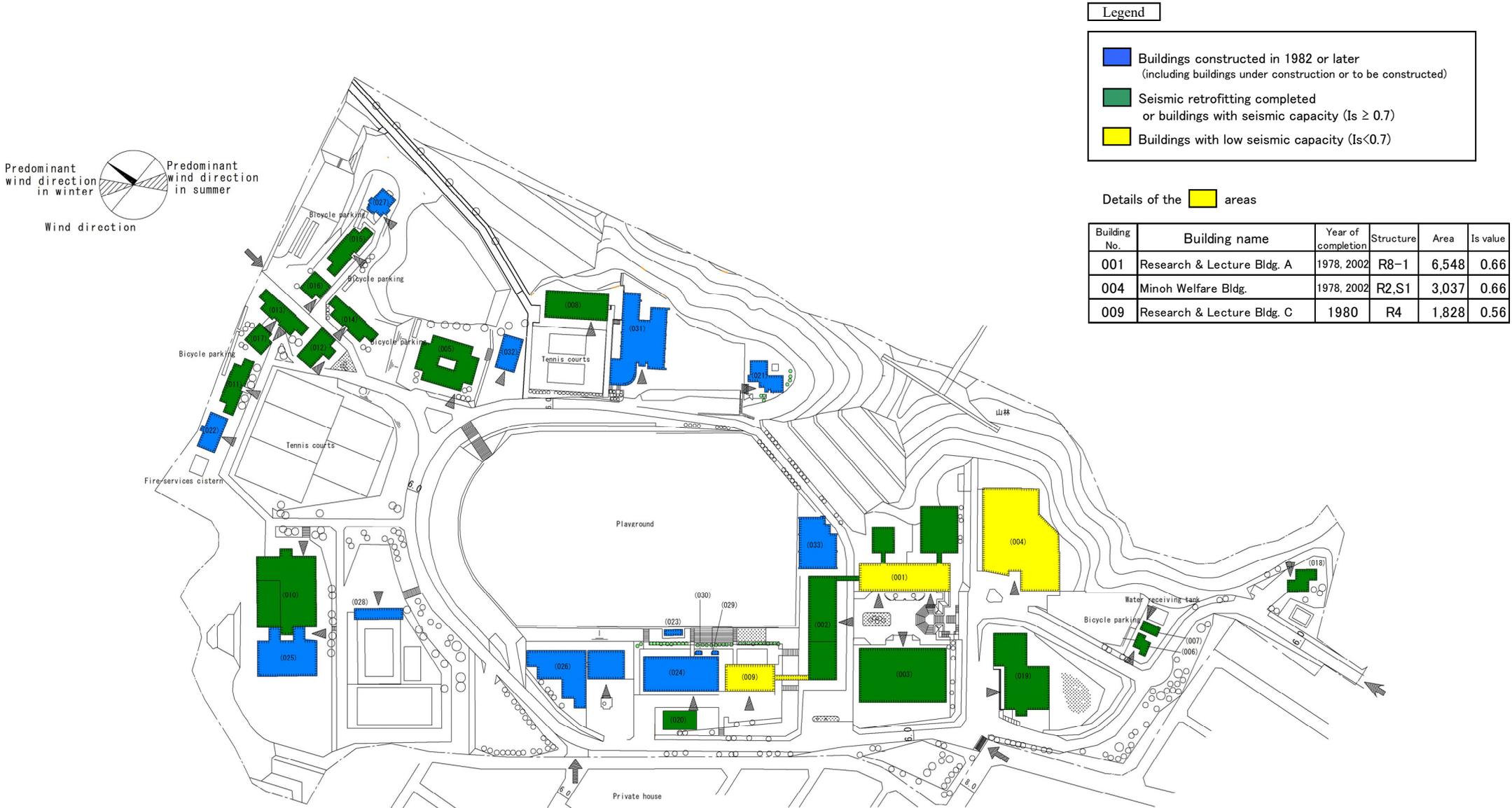
## Suita 1 Complex

Building No.	Building name	Year of completion	Structure	Area	$I_s$ value
061	Engineering Bldg. P2	1969	R4	3,895	0.64
083	Engineering Bldg. U6*	1970	R2	1,400	0.78
123	Infected Animal Experiments Bldg. B	1978	R4	1,425	0.52

\* The seismic capacity of (083) Engineering Bldg. U6 is low ( $CT_u \cdot SD = 0.26 < 0.3$ ).

\* Created based on the report on the actual conditions of facilities of national university corporations, etc. (as of May 1, 2019)

# Map of Seismic Retrofitting Status of the Minoh Complex



\* Created based on the report on the actual conditions of facilities of national university corporations, etc. (as of May 1, 2019)