Essay:

Will 21st Century Architecture Survive?

Akira Wada (President of the Architectural Institute of Japan)

寄稿文：

21世紀の建築は残るか

和田章（日本建築学会会長）

The architecture, towns and cities of Japan are the stage where our lifestyles and occupations are playing out in the 21st century. Looking at the major changes they have undergone, we see that two stand out: the Meiji Restoration in 1868 and the defeat in 1945, which came after four major wars.

With the Meiji Restoration, Western culture and civilization came streaming into Japan, bringing major changes in Japanese architecture. Japan is a beautiful country with well-kept landscapes and a history of coping with threats from nature. In that setting, architecture had developed as a part of Japanese culture. There was an overarching architectural framework that tolerated an appropriate amount of deformation and attenuation. But after the Meiji Restoration, instead of further developing that way of thinking, new architectural styles were imported from Europe and North America, from countries where large earthquakes and other natural disasters were unknown and rigid buildings were made from stone and concrete. Then, after the Nobi Earthquake of 1891 and the Great Kanto Earthquake of 1923, it was realized that earthquake resistant architecture could not be built that way, and Japanese research into earthquake resistant structures began. However, much of the land in Japan still belonged to large landowners, and it could be said that this was an age when architectural culture adopted Western civilization while preserving the culture from before the Edo Period.

The Japanese people had rushed headlong into World War II, but after the war the Allied occupation forces drew up a new peace constitution and redistributed the land to small farmers. This Constitution of Japan is viewed as promises made by the state to the people. Regardless of what it wants to do, the state cannot take action without listening to the opinion of the people and the citizens. This is a democracy that can prevent the state from running out of control, and Japan can be proud of it.

In today's Japan, land is divided into small, privately owned plots in the cities as well as the countryside. The Building Standards Act, which is based on the Constitution, basically holds that architecture is free. Developers and designers are almost always free to be concerned only with the project at hand, so that the resulting architecture is a jumble of disparate designs. Some observers from other countries might find this to be an admirable kind of chaos, but unlike our democracy Japan's towns and cities are nothing to boast about.

For us, structural designers and researchers, postwar earthquakes have frequently revealed blind spots in supposedly earthquake resistant structures. They included two large earthquakes around the end of World War II, the 1964 Niigata Earthquake, 1968 Tokachi-oki Earthquake, the 1978 Miyagi-oki Earthquake, the 1995 Great Hanshin Earthquake, and the 2011 Great East Japan Earthquake.

However, during last year's great earthquake, the Japanese Red Cross Ishinomaki Hospital designed by Nikken Sekkei continued to function even after the earthquake, demonstrating that genuine progress has been made over the last 30 years in the development of seismically isolated structures. In Sendai and Tokyo, buildings equipped with vibration suppressing dampers demonstrated their ability to withstand the earthquake, one example being the ultra-high-rise tower at Tokyo Midtown in the Roppongi district of Tokyo. It seems that after 100 years of striving, earthquake-resistant engineering has arrived at a turning point. By building structures with an appropriate amount of ductility and incorporating members that absorb the energy of the earthquake, we have shown that the traditional Japanese approach to architecture can be reclaimed in a valid contemporary guise.

The Great East Japan Earthquake of March 2011 was a shock because it contradicted widespread belief in the progress of science, technology, and earthquake engineering. As architects and urban planners, we should have been aware of the fearfulness of tsunamis from books and films of the Sumatra earthquake. We were told that large tsunamis had attacked not only the Sanriku Coast of Iwate Prefecture but also the coastal plains of Miyagi Prefecture, but nevertheless continued to build in those regions and to allow children and seniors to live there. We must accept responsibility for that. The next large earthquake and tsunami are likely to strike along the Pacific coasts of Shizuoka and Kochi Prefectures. But even though this threat is just as fearful, preparations are lagging far behind what should be done. I think that instead of giving in to narrow demands from residents, we must have the courage to build the types of architecture and towns that should be built.

At the end of the 21st century, will those who come after us praise us for the excellent architecture and towns that we are building now? The cities of Nara and Kyoto were built more than 1,000 years ago, but they are still superb no matter how often we visit them. It would be disappointing if, when science and learning today have made such progress, we could not do better than Nara and Kyoto.

21世紀を生きる我々の生活と活動、これを演じる舞台としての日本の建築、まち、そして都市を見るとき、これらの大きな変化は1868年の明治維新と、4度の大きな戦争を経て敗戦を迎えた1945年の二度に起きているように感じる。

明治維新により西洋の文明と文化が勢いよく日本に入り、日本の建築は大きく変わった。わが国は美しい自然をもち、国土に丁寧に人の手を入れつつ、大きな自然の猛威に耐えてきた歴史をもち、そうして培われてきた日本の文化としての建築、その適度に変形を許した減衰の大きな建築骨組があった。しかし、明治以降はこの考え方を発展させるのでなく、大地震のような自然災害とは無縁な国々の石やコンクリートで構造物を堅くつくる欧米の建築法を導入した。そして1891年濃尾地震、1923年関東大震災を受け、この方法では耐震建築をつくることはできないことに気づき、日本の耐震構造の研究が始まった。ただ、日本の多くの土地は大地主のもので、建築文化は、江戸以前の文化を守りつつ西洋の文明をとり入れてきたよい時代であったといえる。

第二次世界大戦に突進してしまった日本人を見た米軍進駐軍は、日本に新しい平和憲法をつくり、小作人に土地を分け与えた。この日本国憲法は国民への国家の約束文といわれる。どのようなことでも住民、市民のわがままな意見を聞かねば動かないが、国の勝手な暴走を止め得る、世界に自慢のできる素晴らしい民主主義の国となった。

現在の日本の土地は農地だけでなく、都会でも細かく私有地として分かれ、日本国憲法をもとに「基本的に建築は自由」との考えでつくられた建築基準法に推され、ほとんどの発注者や設計者は自分の目の前の建築のことしか考えず、つくられていく建築はまちまちのデザインになった。これをカオスといって褒める海外の人もいるが、今の日本のまちや都市はとても世界に自慢できるものとはいえない。

耐震構造の面では、終戦前後にも大きな地震があり、その後も1964年新潟地震、1968年十勝沖地震、1978年宮城県沖地震、1995年阪神大震災、2011年東日本大震災など、我々、構造設計者、研究者の盲点を突く震災が次々に起きた。

ただ、昨年の大震災の際、日建設計の設計による石巻赤十字病院は地震後も病院の機能を維持し、この30年に開発してきた免震構造の素晴らしさを社会に発信した。仙台や東京に建設されていたダンパーをもつ制振構造、例えば六本木のミッドタウンに建つ超高層建築などもその耐震性能を発揮するなど、100年以上の歳月をかけて追及してきた日本の耐震技術はひとつのゴールに到達したように思える。構造物を適度に柔につくり壊さず、地震エネルギーを吸収する部材を別に組み込むこれらの構造法は、日本古来の建築の考えを今風にとり戻したともいえる。

2011年3月に起きた東日本大震災は、科学と技術の進み地震工学も万全と信じられていた日本に大きな衝撃を与えた。我々、建築やまちづくりに関係しているものは、津波の恐ろしさを書物やスマトラ地震の映像を見て知っていたはずであり、岩手県の三陸沿岸だけでなく宮城県の平地の沿岸にも大きな津波があったことを知らされていながら、このようなところに次々と建築を建て、そこに子どもからお年寄りまでを住まわせてきた責任がある。次に大きな地震と津波に襲われるであろう静岡沿岸、高知県の太平洋沿岸などにも同じ怖さがあるが、これらへの対策は非常に遅れている。我々は市民のわがままに応じず、あるべき建築やまちを建てていく必要があるように思う。

21世紀が終わるとき、未来の人たちは、現在の我々がつくっている建築やまちを素晴らしいとほめてくれるだろうか。何度訪れても、千年以上前につくられた京都や奈良は素晴らしい。科学や学問が進んだにもかかわらず、奈良や京都以上のことができないことが悔しい。

Face to Face With Nature – Cities, Architecture, People

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Fax: +81(0)3 6205 4386
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発行者／編集者
吉田信之

デザイン・コンサルタント
マッシモ・ヴィネリ

編集担当
横山圭

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電話：(03) 6205 4384（代）　FAX：(03) 6205 4387
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