

# KAJIMA

NEWS & NOTES

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## Life Cycle Architectural System

LIFE CYCLE ARCHITECTURAL SYSTEM  
PROMOTES EFFICIENT AND FLEXIBLE LAND USE

# Life Cycle

LIFE CYCLE ARCHITECTURAL SYSTEM  
PROMOTES EFFICIENT AND



A Toyota Motor Corp. dealership

Kajima has developed a unique approach to design and construction called the Life Cycle Architectural System (LCAS) for facilities that need to last only for a limited period of time, and the demand for such an approach is becoming widespread. LCAS construction projects are aimed at temporarily making good use of underutilized land that is scheduled to undergo full-scale development in a few years as well as for other projects that cover limited time periods. Kajima's LCAS is a comprehensive

design and construction system that minimizes life cycle costs—including the cost of building demolition/disassembly and removal—through the use of simplified construction materials, leased equipment, and practical construction methods. Noteworthy Kajima LCAS projects include the Sun Street shopping center, built in 1997, and contracts for six automobile showrooms received during 1999.

While conventional construction generally aims to



create solid structures built to last for a long period of time, the LCAS concept approaches construction from an opposite angle. Having accumulated considerable technologies, data, and programming expertise in constructing such temporary structures as exposition pavilions and theaters, Kajima decided to more-productively utilize those resources by creating a comprehensive system that features low-cost and quick construction. The Company has gathered appropriate technologies

and standardized procedures for two categories of LCAS projects: temporary-use buildings for approximately two to three years use, and change responsive buildings, which are designed for approximately five to ten years use.

Kajima's LCAS is highly flexible and can easily respond to customer needs for structural additions, remodeling, and functional changes. Also, the basic approach of utilizing standardized materials and equipment

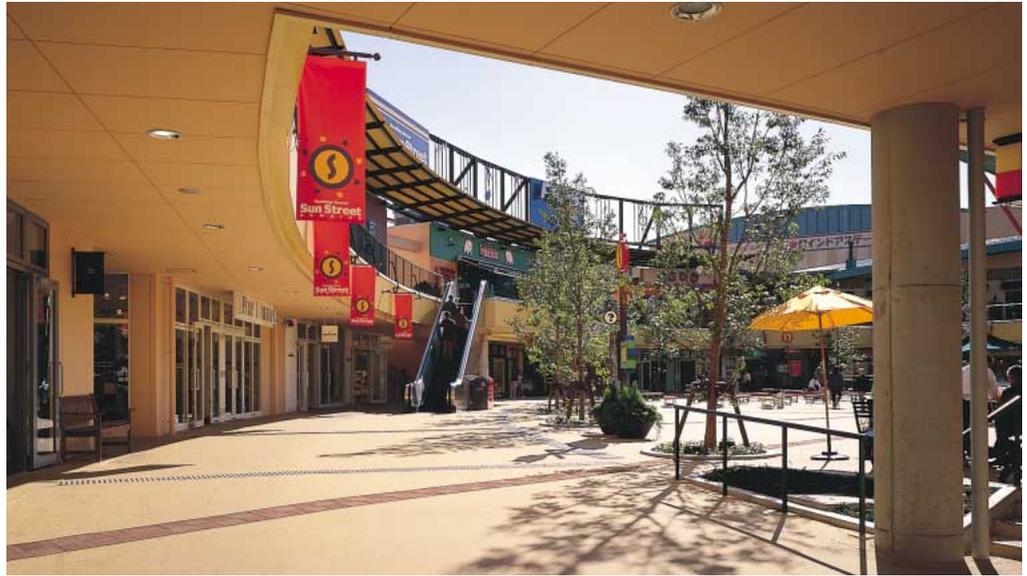
as much as possible makes disassembly more efficient. The Company's LCAS is also distinguished by its superior level of environmental friendliness, through an emphasis on the three Rs—the reuse and recycling of building materials and the reduction of waste products.

The Sun Street project is an urban shopping center that opened in Tokyo's Kameido district in November 1997. Sun Street is built on a 2.4 hectare site that was formerly occupied by a

factory. The redevelopment plans for the site call for Sun Street to operate for a period of 15 years. The site has a central road in the shape of a huge "s," from which smaller roads radiate. Along the roads are two-story structures that house 55 tenants and a five-story parking facility with tennis courts on the top level. Sun Street blends in well with surrounding neighborhood and is visited by many people of all ages.

## Elevations

Sun Street Open-Mall-type Shopping Center



Tentative redevelopment plans for Sun Street's site initially included those for a parking lot, a materials storage facility, a golf practice facility, model homes, and other types of facilities, but the redevelopment's primary characteristics were eventually narrowed down to two—it would be an LCAS project and it would center on commercial facilities. The limited period made the project an excellent candidate for the use of Kajima's LCAS methods. Having first stipulated the 15-year time period, the optimal materials and construction methods were selected. With the need to maintain the buildings for only 15 years, it was decided to employ exposed beams, corrugated steel roof panels, and standardized window sashes. A column knee-braced rigid frame structure was used to simplify

and rationalize construction. Skylights were constructed from standard polyethylene panels. As a result, construction that would normally have required approximately six months was completed in only four months. Moreover, the structures are inexpensive, easily disassembled, and strong.

In the future, Kajima plans to proactively offer its customers structures for diverse proposals for temporary theaters as well as for structures for diverse events, convenience stores, antenna shops, shopping centers, and other facilities. As Europe faces land-use issues comparable with those of Japan, the Company believes that there is considerable potential for overseas application of LCAS methods.

Moreover, LCAS structures are durable beyond the allotted period of use. They are strong, highly earthquake resistant structures, and their life spans can be extended if desired. The LCAS approach is in step with emerging trends and is expected to meet a broadening range of 21<sup>st</sup> century building needs. As mind-sets and cultures evolve over time, the flexibility and diverse potentials offered by LCAS methods are likely to be increasingly appreciated.



# Kajima around the World

## From Japan

### Kajima's Chairman Receives Italy's Highest Distinguished Service Decoration



On January 28, Kajima's chairman, Dr. Rokuro Ishikawa, received the rank of "Cavaliere di Gran Croce," which is the highest honour of the "Order of the Merit of the Italian Republic." Ishikawa was chosen to receive the award by the President of the Italian Republic in honor of his many years of work as the President of the Japan-Italy Association, during which he promoted mutual understanding and exchanges between Italy and Japan, helped strengthen the relationship between the two countries, and strove to ensure that the relationship was totally amicable. The award was presented to Ishikawa at the Italian Embassy in Tokyo by the Ambassador of the

Republic of Italy, His Excellency Mr. Gabriele Menegatti.

Very few Japanese from private-sector organizations have received Italy's highest distinguished service decoration. Among those few are such individuals as Shinzo Ohya, the president of Teijin Limited, and the well-known film director Akira Kurosawa.



### Kajima's President Attends the Third Joint Meeting of the Egypt-Japan Business Councils and Visits Kajima's Bridge Building Project in Egypt



From November 21 through 23, 1999, the Egypt-Japan Business Councils held its third joint meeting in Cairo, Egypt. Co-chaired by Kajima's president, Sadao Umeda, this meeting was the first joint meeting of the councils in 17 years. The meeting was organized to promote stronger economic ties between Egypt and Japan following

the April 1999 meeting of Egypt's President Mubarak and Japan's Prime Minister Keizo Obuchi, who made a joint announcement regarding the need for greater dialogue between the private-sector entities of their countries and their support for such dialogue.

The council's third joint meeting was characterized by active and enthusiastic discussions of how to increase economic exchanges between Egypt and Japan as well as other issues, such as investment-related problems.



During his stay in Egypt, President Umeda visited Qantara, where Kajima is currently building a bridge across the Suez Canal. Funded by a grant from the Japanese government, the construction of the bridge began in June 1998. When completed, the bridge will be the world's largest cable-stayed bridge, with a road-bearing horizontal portion that rises to 70 meters above water level. Noting the difficult work conditions—such as summertime peak temperatures exceeding 50°C—President Umeda made a point of encouraging and thanking the Kajima staff and local employees at the site, who are working day and night.

### M-Wave Wins IOC/IAKS Awards 1999 Gold Medal

Designed by a joint venture of Kume Sekkei, Kajima, and four other partners, the Nagano Olympic Memorial Arena (M-Wave) has received a gold medal from the International Olympic Committee (IOC) and the International Leisure Sports Facility Association (IAKS). The IOC/IAKS Awards are highly influential international architectural prizes for exemplary sports and leisure facilities, and they have been present-



ed every other year since 1987, although the IOC cosponsored the event for the first time in 1999. Selected from among 55 candidates in 18 countries, the winners of the 1999 awards included 3 gold medalists, 10 silver medalists, 11 bronze medalists, and 5 that received special distinctions. The prizes were presented at a ceremony held on October 27, 1999, in Cologne, Germany. Representing Kajima at the ceremony was Masaru Ozaki, who is the General Manager of the Architectural Design Department within the Company's Architectural and Engineering Design Group.

### From the United Kingdom

#### ASDA Swansea—also known as Project Mercury— Kajima sets the U.K. Benchmark for Superstore Construction



Kajima's U.K.-based construction company Kajima UK Engineering Ltd., recently completed a retail out-of-town superstore for the new Wal-Mart subsidiary ASDA. The project was completed in a record 17 weeks from the start of construction to store opening. The 9,250-square-meter store in Swansea, Wales, was constructed 40% faster than a similar store built in northern England 18 months earlier.

The Swansea project made a cost saving of 6% compared with previous benchmarks, which meant it was 15% better than the industry average for all projects.

The project was based on ASDA's model store, which is a standard design modified to suit each site. The building has a steel frame structure with a standing seam built-up roof, composite cladding, and brickwork panel walls.

Kajima's project team incorporated 35 innovations into ASDA's model store specifications and design. These innovations included removing the complex central column supports from the sales floor area and providing walk-through ducts below the sales floor to route mechanical, electrical, and refrigeration services to the display cases.

ASDA's other design and contractor teams visited the site during construction and observed techniques that will be incorporated into future projects. Mike Abel, ASDA's head of research and development, said that if other contractors could not better Kajima's savings then ASDA would "push the Kajima process on to everyone."

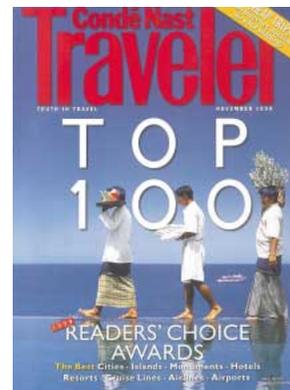
### From Singapore

#### Ritz-Carlton Millenia Hotel in Singapore Judged Among the Best



The Ritz-Carlton Millenia Hotel in Singapore has been chosen as the best hotel in the world according to the 1999 readers' choice poll of *Condé Nast Traveler* magazine. *Condé Nast Traveler* has a readership of approximately 27,000 people, principally business travelers. Each year, it organizes a readers' poll and publishes a list of the top 100 facilities in the cate-

gories of resorts, hotels, cruise lines, islands, monuments, spas, and cities. The Ritz-Carlton Millenia was ranked second in the world with regard to all these categories. The hotel was developed by Kajima Overseas Asia Pte. Ltd. and its partners as part of the Millenia Complex project, which consists of two office towers, two hotels, and a shopping mall. Having been in operation since 1996, the Ritz-Carlton Millenia has been highly evaluated by its clientele and won numerous awards.





KAJIMA CORPORATION

*Head Office*

2-7, Motoakasaka 1-chome,  
Minato-ku, Tokyo 107-8388, Japan  
Telephone: 81-3-3404-3311  
Facsimile: 81-3-3470-1444/5

KAJIMA CORPORATION

*International Division*

28th Floor, Shinjuku Park Tower Building,  
7-1, Nishishinjuku 3-chome,  
Shinjuku-ku, Tokyo 163-1028, Japan  
Telephone: 81-3-5324-5880  
Facsimile: 81-3-5324-5827

KAJIMA U.S.A. INC.

320 Park Avenue, 26th Floor,  
New York, NY 10022-6815, U.S.A.  
Telephone: 1-212-355-4571  
Facsimile: 1-212-355-4576

KAJIMA EUROPE B.V.

*London*

Grove House 248 A, Marylebone Road,  
London NW1 6JZ, U.K.  
Telephone: 44-171-465-0007  
Facsimile: 44-171-465-8788

KAJIMA OVERSEAS ASIA PTE. LTD.

80 Marine Parade Road,  
#14-01/03 Parkway Parade,  
Singapore 449269, Singapore  
Telephone: 65-344-0066  
Facsimile: 65-344-3777

URL: <http://www.kajima.co.jp/>

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