

The conquerors in adversity

LONDON 1908
The marathon that was not elementary
John Hayes is one of the few winners of the Olympic marathon who languishes in obscurity. Italy's Dorando Pietri crossed the line first but was subsequently disqualified for being helped over the line by officials - including Sir Arthur Conan Doyle, the creator of Sherlock Holmes.

Hayes and the American team launched a successful protest just as Pietri was carted off to hospital. According to statements by the two officials who followed him round the course, the tiny Italian had been taking atropine and strychnine capsules during the race which may have accounted for his distressed state on entering the stadium and which almost resulted in him suffering cardiac arrest.

Not even a gold cup offered by then Queen Alexandra could

console him - nor a subsequent victory over Hayes in New York.

"I thought the British were the masters of fair play. Well I spit on that because I know exactly what their understanding of the word is and it isn't what the civilised world believes it means," he said years later.

Pietri was even cheated in death. A man, who had stolen his identity, was given a virtual state funeral in Italy; the real Pietri was to die in 1942 and, because of it being in the middle of World War II, had a much lower key service.

BERLIN 1936
Jesse holds up Adolf's Aryan idols

This was meant to be the crowning moment for Nazi leader and German Chancellor Adolf Hitler as he expected his Aryan race to show they were the best athletes in the world.

So imagine his chagrin as black sprinter Jesse Owens,

deemed by Nazi ideology to be 'non-human', won four golds - the 100m, 200m, 4x100m relay and long jump.

It wasn't as if he had come out of nowhere as Owens had broken three world records the year before and tied one in the space of just 45 minutes in a meet in the United States - not bad for a man who smoked a pack of cigarettes a day all his adult life.

While Hitler never handed out a medal to Owens he did acknowledge him from his box and later received him with other medal winners from the Games at the Chancellery - though of course not in front of the cameras.

However, as Owens remarked when he returned to the States he was obliged to get on buses at the back as blacks were not allowed to ride up at the front. Owens, like Pietri, went on to run against horses, opened a public relations firm



(LEFT) US athletes Tommy Smith and John Carlos protest the lack of rights for blacks in America with a gloved salute at Mexico City in 1968. (CENTER) Italy's Dorando Pietri is 'helped' across the finish line to earn his spot in Olympic infamy during London 1908. (RIGHT) Jesse Owens shows up Adolf Hitler in perhaps the most abiding image of modern Olympics at Berlin in 1936.

and was awarded the Medal of Freedom. He died of lung cancer aged 66 in 1980.

MEXICO CITY 1968
Smith and Carlos, the gloved crusaders

American athletes Tommy Smith and John Carlos were outstanding 200m runners and proved it by taking gold and

bronze at the Mexico Olympics.

However, both men staged a remarkable protest on the medals podium. Both wore one black glove at the medals ceremony - 24-year-old Smith on his left hand Carlos, 23, on his right - and raised their arms in protest at the lack of rights for

blacks in the United States.

They also wore no shoes to reflect the poverty of blacks and beads as an image of the lynching of blacks.

Their protest outraged the white head of the United States Olympic Committee (USOC) Avery Brundage who had them stripped of their medals and

sent home.

But they inspired a whole generation of black athletes - even the silver medallist, Australia's Peter Norman showed solidarity by grabbing a sticker which stood for Olympic Project for Human Rights so he wouldn't look out of place on the podium.

Wonderful 'Water Cube'

REZAUL KARIM back from China

A shiny, silver, square building stands next to the 'Bird's Nest'.

Upon initial glances, people may not connect it to the bubble-wrapped National Aquatics Center, nicknamed the 'Water Cube', but after careful investigation, viewers will find that the shapes woven by the steel framework is of water molecules.

This is an architectural building that literally embodies the water theme. The blue 'bubbles' made by the ETFE membrane fully showcase the grace and sensitivity of water. The design and construction of the 'Water Cube' steel structure stunned the whole world. The Guardian, a British newspaper, published an article calling it a masterpiece of theoretical physics. The 'Water Cube', is one of the iconic structures for the upcoming summer Olympic Games.

The membrane structure 'cloth' has been the main attraction of the National Aquatics Center ever since its completion. This steel framework was actually the most difficult part of the design and construction of the Olympic facility.

The steel framework of the 'Water Cube' is totally different from that of any other facility in China. The main feature of the National Aquatics Center's (NAC) steel framework is irregularity. This irregularity presents a pure and natural beauty, but at the same time, gave planners much welding difficulty.

Designers created the steel structure of the 'Water Cube' based on the 'bubble theory,' a

somewhat controversial theory because of its many unsolvable problems. When the designers of the National Aquatics Center decided to practice the bubble theory, it drew great attention in the international architecture field. Almost all of the architects that have studied the bubble theory have come to visit the venue construction site.

It took only 10 months for workers to build the large-scale, irregular steel structure of the Olympic venue, which is considered a miracle in the history of world architecture.

Green architectural wonder
The construction of the NAC, or the 'Water Cube,' topped off today. The 'Water Cube' was built in accordance with a water-saving design concept to be a gigantic green architectural wonder.

The venue's membrane structure, covered by ETFE (Ethylene Tetrafluoroethylene) air cushions, is not only the first of its kind in China and the world's largest and most complex ETFE project, but it is also an economical and water-saving creation.

The blue-colored 'Hubble-bubble' material is much lighter than conventional glazing structures with the same lighting effect. So the cost of its supporting steel structure was reduced considerably, said Zheng Fang, the top designer of the Chinese-side design company.

In addition, the 'Water Cube' was designed with water-saving and environmental protection efforts. According to statistics, the outer surface and roof facade can 'collect' 10,000 tons of

rainwater, 70,000 tons of clean water and 60,000 tons of swimming pool water annually. And the venue can also save 140,000 tons of recycled water a year.

The classic architecture to last 100 years

How long can the 'Water Cube' survive? Zheng Fang, the chief designer for the 'Water Cube,' gave the following answer -- 100 years. Can any architectural structure survive one hundred years, subject to bad

weather and other outside forces? Tests have proven that the strength of the membrane structure of the National Aquatics Center can meet these stability requirements, even in bad weather conditions such as hailstones.

According to Fang, a moat was constructed around the 'Water Cube' and the interior membrane structure also maintains a certain distance from

the public area. Such a design makes sure that the spectators cannot touch the 'bubbles,' which greatly reduces the possibility of harm to the structure.

According to the law of biology, birds do not like to stray upon semitransparent things. The only place atop the 'Water Cube' that birds might land on is the rainwater collection system. The designers set up metal wires on the collection system particularly to let the

80,000 square meters, containing 17,000 standard seats, including 6,000 permanent seats and 11,000 temporary ones. During the 2008 Olympic Games, it will produce 42 gold medals in swimming, diving and synchronized swimming.

After the Olympics, it will be converted into a multi-functional facility for sports, culture and recreation, featuring a 'water setting' for members of society.

Another potential problem

air naturally, are set on the roof and the body of the 'Water Cube.' After fresh air enters the building, it can be discharged through the vacuum in the roof. This is how the heating within the building is released.

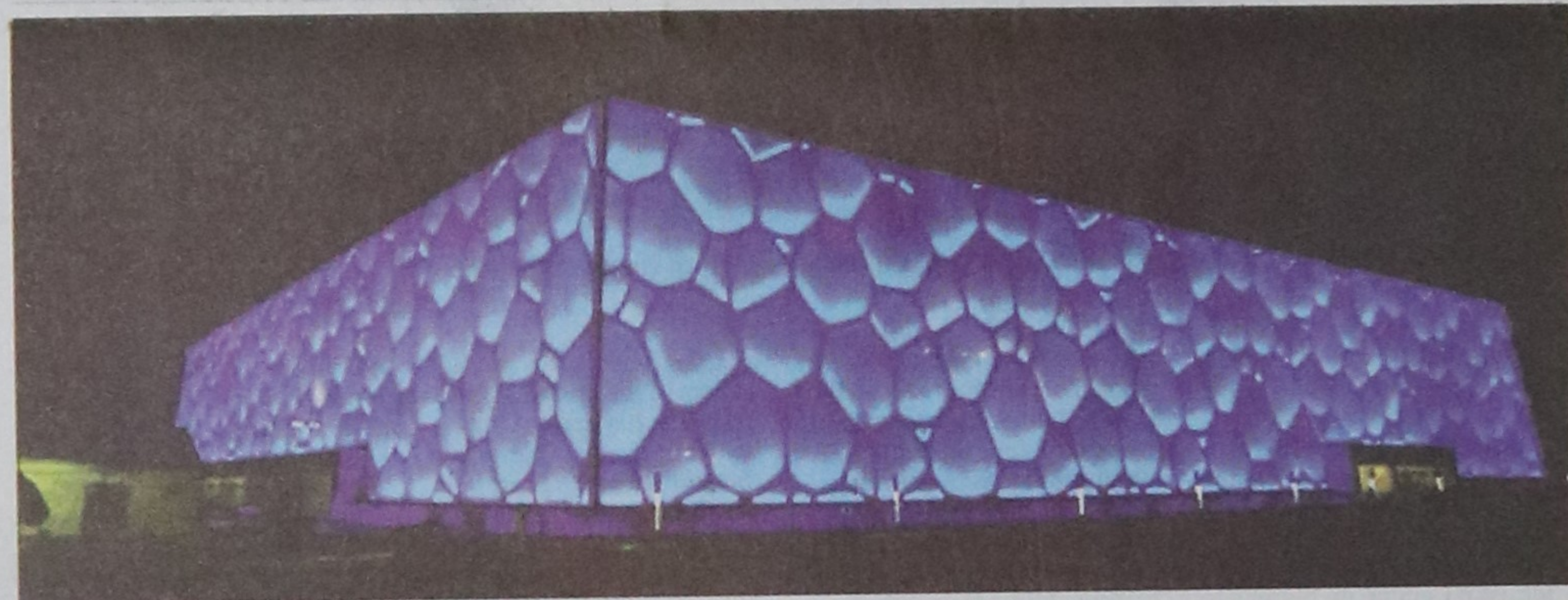
The 'Water Cube' can 'wash its face' by itself?

The ETFE membrane is self-cleaning in nature. Since the friction coefficient of the material is small, dust does not easily attach onto the structure. Even if dust does collect on it, as long as it rains, the surface is washed by rainwater.

A beach umbrella for 'Water Cube'

The Beijing Olympic Games are to be held in the summer. Will the strong sunshine make the 'Water Cube' a hot 'greenhouse bathing room'? How can super high temperatures and bright sunlight be avoided in the transparent Water Cube while maintaining the venue's features and beauty?

The secret lies in the billions of plating points on the ETFE membrane, which control the temperature and lighting of the Water Cube like a beach umbrella. The plating points determine the transparency degree of the membrane to control the amount of heat brought about by the sunrays. The plating points can also change the direction of the sunlight and disperse heat. Like an umbrella, the plating points distribute sunlight, keeping out extra energy while allowing the required sunshine through to guarantee the temperature and lighting for the venue.



INTO THE BLUE: Beijing's magnificent Water Cube will play host to most of the aquatic events in this summer's Games.

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birds rest and make sure they do not step on the 'bubbles.'

Located on the southern part of the central area of the Olympic Green in Beijing, the NAC has a planned construction area of 6.95 hectares. Being adjacent to the central axis of the city, the NAC is situated on par with the National Stadium, at an equal distance to the axis.

The NAC's Games-time construction area is close to

Comfortable humidity with no steam

The Water Cube maintains spring-like warm temperatures with a comfortable level of humidity amid the city's chilly outdoor circumstances. And even in the city's humid August, the venue will be fully dew prevented.

With sustainable development as its design principle, a strict temperature and humid-

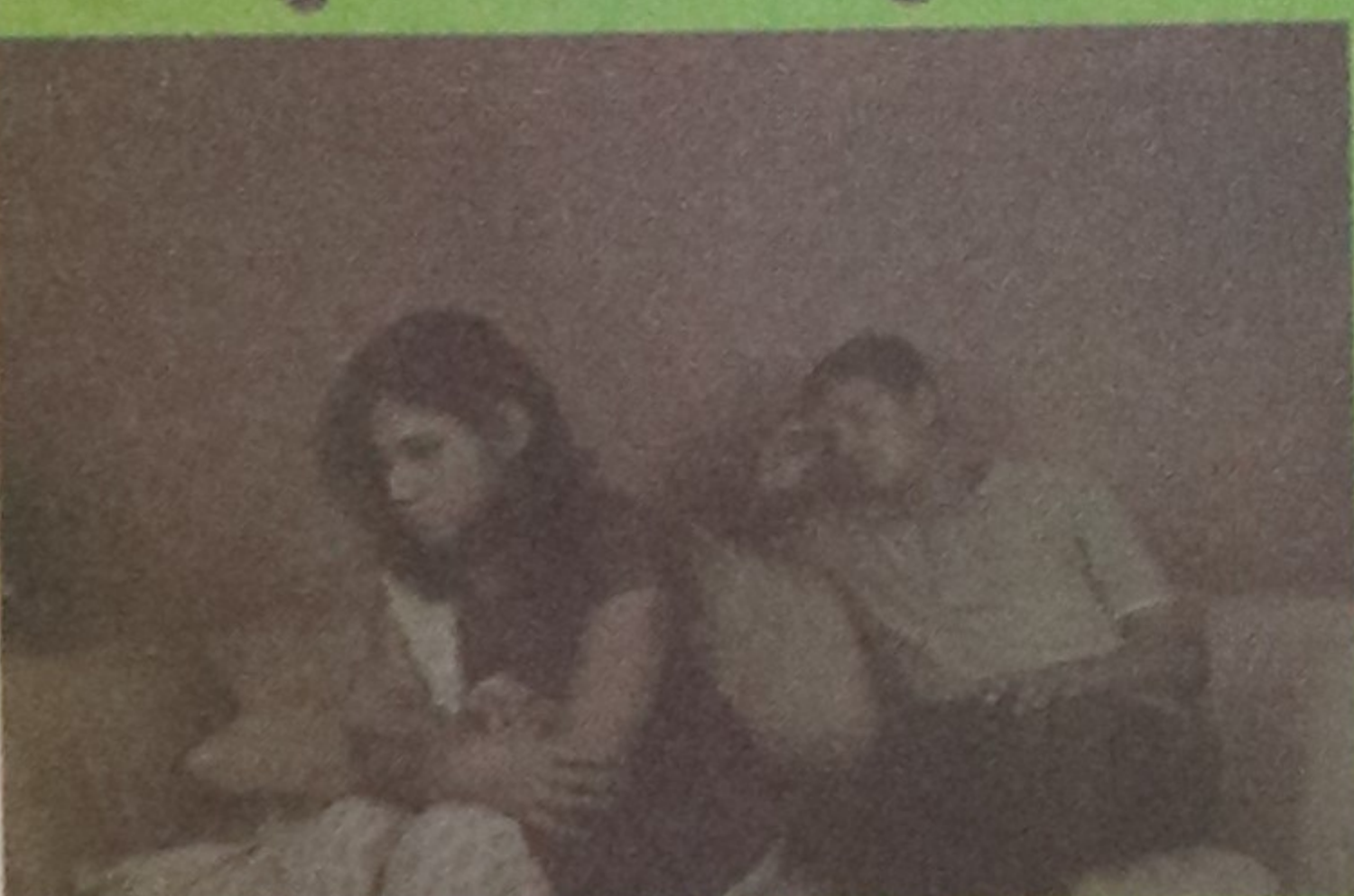
ity control system was built with recycled hot water to supply an air-conditioning system in the living area and the swimming pool. In addition, other cooling methods, such as outdoors and indoors air-recycling systems, solar energy and double-deck ventilation devices, successfully maintain comfortable temperatures and stable humidity of between 50 and 60 percent in the venue.

Eight fans, which discharge the

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