



IQAir

The Secret Weapon of the 2008 Beijing Olympics

Smog clouds on an average day in Beijing.

by Frank Hammes, President of IQAir

The signs were ominous when my Lufthansa flight from Munich was making its final approach into Beijing. Within a matter of minutes, a perfectly clear sky turned into a thick soup of smog. As I stepped off the plane that day in November 2007, I saw with my own eyes why the U.S. Olympic Committee (USOC) had arranged to meet us in Beijing. Buildings only a few blocks from the airport were shrouded in brownish clouds. The sky itself was yellow and overcast even though it was a sunny day. The air pollution in Beijing hung over the entire city like thick dense smoke from a forest fire. This was air pollution created by the success of a thriving developing country. Millions of cars. Tens of thousands of factories. Thousands of construction sites. Just another day in Beijing, but the worst air pollution I had ever seen.

I could now understand why athletes and coaches around the world had been voicing concerns about how the poor air quality in Beijing would decimate performance, especially in endurance sports. The Australian team even announced that they would not attend the opening ceremony because they wanted to minimize their athletes' exposure to air pollution. By limiting the time they were on the ground in Beijing before their events they were hoping to increase their athletes' ability to perform. Other teams said they were bringing dust masks. I heard of many ideas of how teams were preparing for Beijing, but with about a third of all athletes suffering from asthma, they all seemed limited and ineffective.

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--Frank Hammes

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What we had in mind for the USOC was different. From our first meeting many months earlier in Colorado Springs at the national Olympic training facility, it was clear that only a comprehensive air cleaning approach was going to give the U.S. Olympic team the kind of solution required. With no control over the air quality that athletes were to encounter outdoors, the name of the game was to give them the best air quality possible in their indoor training facilities and living quarters. The strategy was essentially identical to our approach for serious allergy and asthma sufferers back home. Take control of the air quality indoors where you spend most of your time. Create the kind of indoor environment that gives your body the time to rest and repair itself to better deal with the onslaught of allergens and pollutants when you are out and about.

While IQAir has been involved in the past with providing air purification to athletes with asthma during the Olympics, this project was different in its systematic nature. The goal was to reduce the negative effects of air pollution for an entire team. I felt fortunate and proud that IQAir had been asked by one of the world's most successful teams to use its 45 years of experience and expertise in air cleaning in what would certainly turn out to be a historic event.

In terms of air cleaning technology, the biggest challenge presented itself in the wide range of air pollutants that would have to be removed. Harmful ultra-fine particles from coal burning and millions of mostly older automobiles join clouds of dust from countless construction sites. A reading on my handheld particle counter quickly revealed the extent of the small particle problem in Beijing: over 50 million particles per cubic foot in the size range 0.3 microns and larger. As a comparison, Los Angeles has about five million on a bad day. In addition, like any large city, Beijing was suffering from elevated levels of ozone (O₃), sulfur dioxide (SO₂) and nitrogen oxides (NO_x). The difference here was that I could feel the result of this

pollution in my eyes and through my lungs within minutes.

As we toured the residential and training facilities for our athletes with the USOC medical directors, we quickly realized that it would not only take our most advanced air cleaning technologies, but also different types of systems for the different indoor environments.

The easiest challenge for IQAir was the living quarters at the Olympic Village itself. The typical double bedroom design with in-room air conditioning, made these particularly suitable for our compact high-performance room air purifiers. We selected the HealthPro Plus, for its proven effectiveness for ultra-small particles (greater than 99.5 percent down to 0.003 microns) as well as its wide spectrum gas phase filter. This was not only going to take care of ozone, sulfur dioxide and nitrogen dioxide but also residual levels of formaldehyde and VOCs from building materials. We deal with this everyday for individuals suffering from Multiple Chemical Sensitivity (MCS).



Giant portable CleanZones being assembled in IQAir's Swiss factory.



IQAir's air cleaning systems were recently secretly tested at the athlete training facilities in Beijing.

The training center for our U.S. Olympians was literally a bigger challenge. Rented by the USOC from a local university, some of the indoor training areas featured central heating and air conditioning (HVAC) -- opening them up to the possibility of their HVAC systems being upgraded with high-efficiency air filters. Others had no HVAC and would require large facility sized portable systems.

For the facilities with central HVAC systems, we were able to use the same filtration technology used in our high-end residential whole-house air cleaning systems. The IQAir Perfect 16's advanced micro-fiber filtration would provide the necessary level of protection from harmful ultra-small combustion particles and allergens.

For large facilities without central air conditioning, we utilized an entirely new generation of stand-alone facility sized air cleaning systems. These combine IQAir's unique HyperHEPA technology with its wide spectrum gas phase media cartridge technology.

While some will call the efforts that IQAir is undertaking on behalf of the USOC an unfair competitive advantage, I strongly disagree. The air that athletes are breathing is as much part of the preparation for optimum performance as the food that they are eating.

Many teams are bringing their own cooks, to ensure that their athletes get what they need in terms of nutrition. They also bring their physical therapists to give their athletes the stretching and massages needed to recover quickly. Our role was to bring the cleanest, healthiest air to our athletes to allow them to recover from whatever they were facing outdoors. The fact that this could be viewed as THE secret weapon at the Olympics may be a little exaggerated. If we are able to help prevent just one asthma attack, I will feel like we have accomplished our mission. Of course, if our Olympic athletes are able to bring home an extra medal or two as a result, I feel that this would be a nice validation of the advantages of IQAir's ultra-high efficiency air cleaning. ❖

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Portable HealthPro Plus air purifiers waiting to be placed in athletes' bedrooms.



IQAir President Frank Hammes tests their air filtration on a system placed in the USOC athletic facilities in Beijing.

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