As the coronavirus spreads in the US, workers in some hospitals are going to start running out of space. A recent study estimates millions of Americans infected by coronavirus might end up in the hospital. Very 2 million could require care in an ICU. Adding to the challenge, the US has fewer hospital beds per 1,000 people compared to places like Japan, South Korea, and Italy, according to data compiled by the Organization for Economic Cooperation and Development, or OECD. All hospital beds are not equally equipped. Right now, hospitals need special rooms that can isolate people with contagious diseases like the coronavirus, known as negative pressure rooms. And intensive care unit rooms, where doctors provide advanced life-saving care, are also in demand amid the pandemic.

MedHubs are rapid-deployment health care skyscrapers designed as a response to the current Coronavirus pandemic. The idea is to create temporary structures that could be deployed rapidly, like traditional hospital tents, but with a high level of bioclimatization to prevent the spread of the virus. Transforming container ships (which are not in service currently due to a halt in global trade) into hospitals, stocked with medical equipment, provides more space to treat patients, not to mention added privacy. This also helps provide access to medical care, as the ships can be deployed to different areas. The building pattern allows for the flexibility to establish positive pressure rooms, negative pressure rooms, and shared spaces to optimize the use of the infrastructure. All the prefabricated boxes are manufactured in factories and ready to erect on site.

### Medical Unit

1. **Intensive Care Unit**
2. **Treatment Unit**
3. **Quarantine Unit**

### Medical Services

- Intensive Care
- Treatment
- Quarantine

### Structural Unit

- Steel
- Concrete
- Glass

### User-Oriented Units

- Modular Healthcare services
- Central Core for services

### Connection with Context

- **Area Covered**: 10 m²
- **Time**: 5 min
- **Option 1**: The Umbrella Folding
- **Area Covered**: 4 m²
- **Time**: 30 min

### Architecture Portfolio

Karan Sharma

### HOSPITAL BEDS PER 1000 PEOPLE

<table>
<thead>
<tr>
<th>Country</th>
<th>Hospital Beds</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. Korea</td>
<td>12.3</td>
</tr>
<tr>
<td>China</td>
<td>7.3</td>
</tr>
<tr>
<td>Italy</td>
<td>6.0</td>
</tr>
<tr>
<td>USA</td>
<td>5.0</td>
</tr>
<tr>
<td>Japan</td>
<td>23.5</td>
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<tr>
<td>South Korea</td>
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<tr>
<td>France</td>
<td>8.0</td>
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<tr>
<td>Germany</td>
<td>8.0</td>
</tr>
<tr>
<td>Spain</td>
<td>7.0</td>
</tr>
</tbody>
</table>

### Plans

- Section Plans
- Front Elevation
- Side Elevation
- Plan

### Facilities

- **XL Shelter**: 10 m²
- **Area Covered**: 4 m²
- **Time**: 5 min
- **Option 2**: The Umbrella Folding

### Materials

- Steel
- Concrete
- Glass

### Design Concepts

- **MedHubs**: A rapid-deployment health care skyscraper designed as a response to the current Coronavirus pandemic.
- **Temporary Structures**: Designed to be deployed rapidly, like traditional hospital tents.
- **Container Ships**: Converted into hospitals to provide more space for treating patients.
- **Negative Pressure Rooms**: Special rooms to isolate people with contagious diseases.
- **Intensive Care Unit Rooms**: Where advanced life-saving care is provided.
- **Optimization of Infrastructure**: Utilization of prefabricated boxes in factories for rapid deployment.

### Benefits

- **Space Efficiency**: Temporary structures allow for efficient use of space.
- **Bioclimatization**: Prevents the spread of the virus through proper ventilation and bioclimatic design.
- **Accessibility**: Provides access to medical care in different areas worldwide.
- **Privacy**: Adds privacy to patient care environments.

### Challenges

- **Resource Allocation**: Ensuring adequate medical supplies and equipment.
- **Logistics**: Moving and setting up the temporary structures quickly.
- **User Adaptation**: Patients and healthcare workers adapting to temporary environments.

### Future Directions

- **Sustainability**: Incorporating sustainable practices in temporary structures.
- **Technology Integration**: Advanced technologies for improved patient care.
- **Public Health Response**: Enhancing preparedness for future pandemics.

### Conclusion

MedHubs offer a rapid response to the current pandemic by providing temporary healthcare solutions that can be quickly deployed and adapted to varying needs. They represent a significant advancement in healthcare infrastructure management during crises.