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Naveekaran- Renovation for the Future

Naveekaran

Naveekaran was originally founded in 1526 as Delhi, the capital of India (for location in India, see picture to the right). Before engineers renovated Delhi, it was one of the most polluted, cramped, and dirty cities in the world.

Today, there is a population of 13 million, and every one of Naveekaran's citizens is thriving in a sustainable, clean, and healthy environment that has been operating for about 100 years.



Nowhere else in the world can you see such cutting-edge precision and newly designed marvels. At the Renovation Conference of Delhi in 2018, planners talked to the best engineers about revitalizing the city. Not only did the improvements meet the expectations of Naveekaran's beloved citizens, they exceeded expectations and continue to do so today.

Naveekaran's Climate, Population, and Jobs

Naveekaran has a climate that typically fluctuates from 40 to 100 degrees Fahrenheit, depending on the time of the year. Naveekaran's topography is generally flat, aside from the Avaralli Mountains, which is home to the largest state-of-the-art observatory in the world. The economy relies heavily on tourism, selling power to neighboring cities, trade, and government-associated programs. India's government is a democracy that believes in listening to citizens and using their ideas to improve the country and its cities, ideals that are clearly demonstrated in Naveekaran. A huge priority of Naveekaran is the health (both physical and mental) of its citizens.

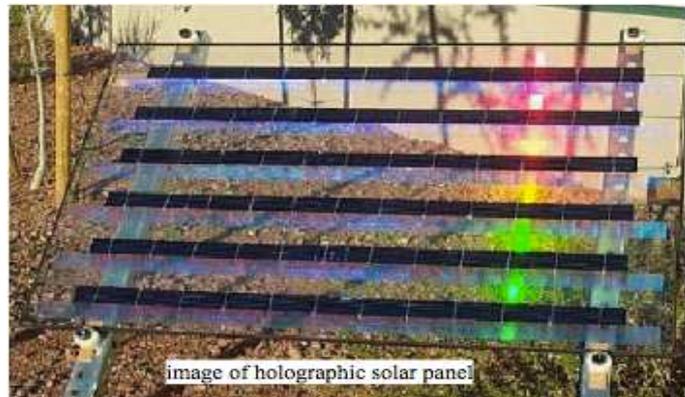
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As a result of medical advances, people are living longer and the population has increased by 5 million people in the past 100 years. The cultural tradition of staying near family and not moving away has also helped the population grow. The current population of 13 million people demands a high number of diverse jobs to attract employees and larger companies. The highest professional demand is for engineers, and every type of engineer is valued, appreciated, and needed. From working on redesigning city blocks (civil engineers) to testing and implementing the energy system (chemical and electronic), engineers have many important duties that help the city run more smoothly.

Naveekaran's Innovative Systems

Naveekaran is home to some of most technologically groundbreaking systems in the world, including its power system, which keeps the pollution levels low, the city as a whole green and eco-friendly. The energy system, used

throughout Naveekaran, is called Holographic Photovoltaic Thermal Energy, or HPTE for short. HPTE works by allowing photons (particles of light) to knock electrons free from atoms, which generates a flow of electricity. The holographic aspect

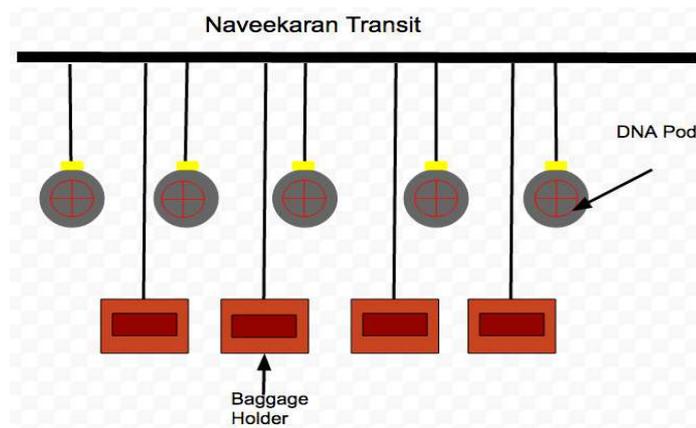


stems from the physical look of the panels because they are made out of a metallic material called FeCa (iron and calcium) and commonly known as holograph. Throughout Naveekaran you will see these fun and appealing panels, even on historical buildings! During the Delhi Renovation Conference of 2018, one of the top sustainability engineers recommended turning the historical sights into power providers in order to have a constant green electricity source. With normal power usage by its citizens, HPET provides Naveekaran with way too much power to store so the city sells whatever power is not used to neighboring cities and this has become a key “export”.

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The biggest power-consuming system in Naveekaran is our mass transit system. The civil and mechanical engineers, who helped renovate Delhi, created a transportation system (called Naveekaran Transit) so

technologically advanced, that it won the EPA Green Power Partnership Award for 5 straight years, from 2036-2041. It works by using a set of electrolysis lasers to break any human into atoms that are then sucked into DNA pods that travel along wires under



Naveekaran to the final destination where reverse electrolysis lasers reassemble the commuters. If it is necessary to bring something in the 'teleporters', citizens insert the baggage into a carrying system that rides next to the DNA pods. This type of transportation does not, however, apply to fire and police. They, along with healthcare providers, use hover-cars instead. At first, engineers considered transportation by "teleportation" to be impossible. They kept running into issue after issue and it took them 136 tries to finally get the system right. Unfortunately, it is more expensive than other types of transportation, but because of its efficiency and environmental benefits, the city planners decided the extra effort and cost was more than worth it.

Another one of the innovative systems that is key to Naveekaran is for waste management. Biosystems engineers designed a system, called the RRR, which disposes of, or reuses, all the waste that the large city produces. The three R's of the RRR stand for Rot, Reuse, and Replenish. Whatever waste comes out of Naveekaran is sorted into either the rot, reuse, or replenish cycle to reduce waste greatly.

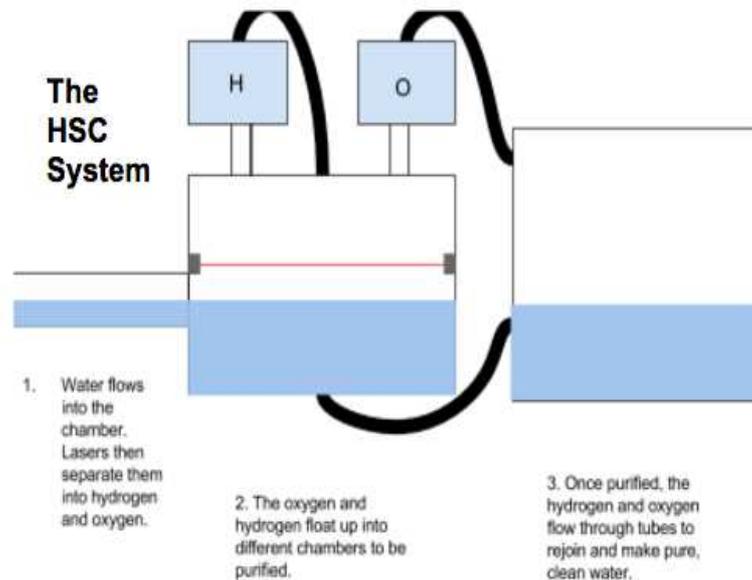
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Naveekaran's water system, the Hydrovascular Siphoning Carriers (HSC), is another aspect that makes the city very technologically advanced. This system runs by taking water and separating the hydrogen from the oxygen using a heating chamber with electrolysis lasers embedded into it.

When the electrolysis lasers run through the water, the hydrogen floats up into a chamber where it is purified using Benzocaine (numbing agent). Once the purification happens, it is sent through a vacuum to a tank, where it rejoins the oxygen to once again form water.

Meanwhile, the oxygen goes through the same process, although instead of

Benzocaine it is purified by the stream of a vitamin C product to ensure health among all citizens. After purification, it is sent through the same type of vacuum to the tank with the hydrogen and pure, clean water ensues. Naveekaran has water pumps all throughout the city that are used to send the water to citizens and facilities. By using this process, the system can purify even the grossest most polluted waters that have been plaguing Naveekaran since it was known as Delhi.



Naveekaran For All Ages

Senior citizens face many issues throughout their daily lives. During the Delhi Renovation Conference of 2018, multiple problems involving older adults were brought to light; some of these issues were: mobility, depression, loss of mental capability, and physical side effects of aging. All of these problems were found to be relating to the quality of senior citizens' lives.

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Each of Naveekaran's newer systems and community programs address an element important to our citizens' quality of life. Naveekaran Transit solves the subcategory of mobility, which is why engineers chose that design over the other proposed solutions. Health officials and electrical engineers developed a revolutionary way to solve the subcategory of physical effects; their solution is called MediChips.

MediChips are tiny pieces of equipment that are installed into the back of someone's ear that can record heart rate, blood levels, cholesterol levels, and so much more. Starting in 2090, all citizens of Naveekaran aged 55 (the legal definition of senior citizen) and older were equipped with these chips. If someone's MediChip detects something wrong, it will notify a healthcare professional of their current location and vital signs, then send first responders to deal with any issues. This revolutionary concept has helped increase the lifespan of citizens so much that, now, the average lifespan in Naveekaran is 115 years old.

As of 2050, Naveekaran has been the top choice worldwide for senior citizens to retire to; and it's no surprise. Naveekaran features some of the most innovative and life-changing retirement centers that you will ever find, including the Flora and Fauna Community. In this community, occupants will find themselves immersed in a beautiful environment surrounded by loving caretakers and entertainment that will last a lifetime. The Flora and Fauna Community features what citizens living there like to call the Interactive Zoo, which features live (harmless) animals for the elderly to take care of, so as to ease their loneliness and depression. There are also fresh gardens for those with a green thumb to tend to and for the whole center to enjoy fresh fruits and vegetables. Not far from the Flora and Fauna Community is the Senior Citizen Activity and Trivia Center, which focuses on combating mental illnesses and psychological breakdowns to help improve the mental acuity "subcategory". While at the center, citizens can compete in game-show type shows to win prizes. If they're not the competitive type, it also has mind puzzles on large screens that they can work together on. However due to lack of funding the center could not be made as a full retirement living area, unlike the Flora and Fauna Community. Both centers

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aim to address all of the subcategories of a high quality of life and do so in innovative and fun ways.

Innovation and renovation, the two most valuable words in Naveekaran. Before Naveekaran, Delhi was polluted, gross, and cramped. Just before the Renovation Conference of Delhi in 2018 was held, city planners had almost lost hope but their persistence and ingenuity paid off – Naveekaran is now a beautiful city with a thriving population of all ages, a clean and green environment, and revolutionary technologies. Naveekaran perfectly embodies the revolutionary mindset of India and all of its residents.

Works Referenced

- Beem, Regina. "Current Aging Communities." Extended Learning Program. Esmond Station K-8 School. Tucson, 18 August 2017.
- Bemis, Andy. "Current Transportation and Possibilities for the Future." Extended Learning Program. Esmond Station K-8 School. Tucson, 18 August 2017.
- Broschat, Cary. "Solar Power and Advancements." Future City Speakers, Esmond Station ELP Classes. Tucson, 31 Aug 2017.
- "Canada's Adoption of Renewable Power Sources." *Canadian National Energy Board*, <https://www.neb-one.gc.ca/nrg/sttstc/lctrct/rprt/2017cnddptnrnwblpwr/wnd-eng.html>. Accessed 11 Nov 2017.
- Chan, Melissa. "Scientists Just Teleported an Object into Space for the First." *Time*, <http://time.com/4854718/quantum-entanglement-teleport-space>. Accessed 18 Oct 2017.
- Clark, Mark. "Pima Council Plans For Aging." Future City Speakers Extended Learning Program. Esmond Station K-8 School. Tucson, 24 August 2017.
- Clyde, George. "What is Sewage and where does it come from." Dover Township PA, <https://www.dovertownship.org/faqs/what-is-sewage-and-where-does-it-come-from/>. Accessed 10 October 2017
- Critchley, Jim. "Fire Fighting and Possible Changes." Extended Learning Program. Esmond Station K-8 School. Tucson, 18 August 2017.
- Day, Thomas. "Understanding the Issues Facing Seniors." National Care Planning Council, <http://www.longtermcarelink.net/article-2014-6-25.htm>. Accessed 20 Oct 2017.
- DeGood, Kevin. "Aging in Place, Stuck without Options: Fixing the Mobility Crisis Threatening the Baby Boom Generation". *Transportation for America*, <http://t4america.org/docs/SeniorsMobilityCrisis.pdf>. Accessed 18 Oct 2017.
- "Delhi Geography." *Maps of India*, <https://www.mapsofindia.com/delhi/geography.html>. Accessed 9 Aug 2017.
- "Delhi, India." *Circles of Sustainability*, <http://www.circlesofsustainability.org/cities/new-delhi/>. Accessed 10 Nov 2017.

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- "Delhi to Mountains." *India Mike*, <http://www.indiamike.com/india/india-travel-itinerary-advice-f91/delhi-to-mountains-t21740/>. Accessed 9 Sept 2017.
- "Delhi Weather." *Accuweather*, <https://www.accuweather.com/en/in/delhi/202396/weather-forecast/202396>. Accessed 10 Nov 2017.
- "Fission of Atoms." *Physics4Kids*, http://www.physics4kids.com/files/mod_fission.html. Accessed 19 Sept 2017.
- Germanos, Nicholas. "Davis Monthan Base Development and Planning." Future City Speakers, Extended Learning Program. Esmond Station K-8 School. Tucson, 25 August 2017.
- Griffiths, James. "New Delhi is the most Polluted City on Earth." *CNN*, <http://www.cnn.com/2016/11/07/asia/india-new-delhi-smog-pollution/index.html>. Accessed 10 Nov 2017.
- "Healthy Aging Facts." *National Council on Aging*, <https://www.ncoa.org/news/resources-for-reporters/get-the-facts/healthy-aging-facts/>. Accessed 18 Oct 2017.
- Hegg, Jessica. "110 Activities for Elderly and Seniors [Ultimate List]." *Vive Health*, 22 March 2017, <https://www.vivehealth.com/blogs/resources/activities-elderly-seniors>. Accessed 20 October 2017.
- Horner, Tom. "Custom Water Efficiency Solutions." *Water Management Inc.*, <http://www.watermgt.com/>. Accessed 18 Nov 2017.
- Murphy, Margi. "Teleportation is possible, so how long will it be until humans can use the technology?" *News Limited*, <http://www.news.com.au/technology/innovation/inventions/teleportation-is-possible-but-how-long-will-it-be-until-humans-can-use-the->
- "New Delhi: Annual Weather Averages." *Holiday Weather*, http://www.holiday-weather.com/new_delhi/averages/. Accessed 10 Nov 2017.
- Otfinoski, Steven. *Recycling and Upcycling*. Scholastic, 2016.
- "Photovoltaic Systems." *Renewable Energy World*, <http://www.renewableenergyworld.com/solar-energy/tech/solarpv.html>. Accessed 18 Oct 2017.
- "Population of Delhi, India." *India Online Pages*, <http://www.indiaonlinepages.com/population/delhi-population.html>. Accessed 10 Nov 2017.
- Powell, Cory. "Will Human Teleportation ever be Possible?" *Discover Magazine*, <http://discovermagazine.com/2014/julyaug/20-the-ups-and-downs-of-teleportation>. Accessed 18 Oct 2017.
- "Power Plants and Types of Power Plant." *Electrical4U*, <https://www.electrical4u.com/power-plants-types-of-power-plant/>. Accessed 18 Oct 2017.
- Prigg, Mark. "Scientists say teleportation is 'Possible' after Successfully Transferring 3 atoms." *Daily Mail*, 29 May 2014, <http://www.dailymail.co.uk/sciencetech/article-2643332/Beam-Scientists-sat-teleportation-possible-transfer-atoms.html>. Accessed 18 Oct 2017.
- Quiroga, Alfredo. "Parks and Recreations at the Present and for the Future." Extended Learning Program. Esmond Station K-8 School. Tucson, 18 August 2017.
- "Renewable Energy Explained." *US Energy Information Administration*, https://www.eia.gov/energyexplained/?page=renewable_home. Accessed 18 Oct 2017.
- "Resilient Communities: Using Nature to Reduce Flood Risk." *The Nature Conservancy*,

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- <https://www.nature.org/ourinitiatives/urgentissues/water/protecting-rivers/natural-solutions-for-reducing-flood-risk.xml>. Accessed 19 Oct 2017.
- "Rivers and Lakes [of Delhi, India]." *Discovered India*, <http://www.discoveredindia.com/delhi/attractions/rivers-and-lakes/>. Accessed 18 Nov 2017.
- Roper, Kelly. "Ideas and Fun Activities for Senior Citizens." *LovetoKnow*, http://seniors.lovetoknow.com/Ideas_for_Fun_Activities_for_the_Elderly. Accessed 20 Oct 2017.
- "Senior Center Facts." *National Council on Aging*, <https://www.ncoa.org/news/resources-for-reporters/get-the-facts/senior-center-facts/>. Accessed 20 Oct 2017.
- "Senior Citizen Information." *HealthDay*, <https://consumer.healthday.com/senior-citizen-information-31/>. Accessed 20 Oct 2017.
- "Sewage Treatment Plant Process STP." *Perfect Pollucon Services*, <http://www.ppsthane.com/blog/sewage-treatment-plant-process-stp>. Accessed 18 Nov 2017.
- Singh, Shashank Shekhar, Singh SK, and Shuchuta Garg. "Environmental Concerns in National Capital Territory of Delhi, India." *J Climatol Weather Forecasting* vol. 3, no. 147, 2015, doi:10.4172/2332-2594.1000147. Accessed 18 Nov 2017.
- "Solar Photovoltaic Technology Basis." *National Energy Renewable Laboratory*, <https://www.nrel.gov/workingwithus/re-photovoltaics.html>. Accessed 10 Oct 2017.
- Stang, Sally. "Current Housing and Development Plans and Changes in Policies." Extended Learning Program. Esmond Station K-8 School. Tucson, 18 August 2017.
- "Top 10 Concerns that Seniors Face." *Miami Home Care Services*, <http://miamihomecareservices.com/blog/top-10-concerns-that-seniors-face/>. Accessed 20 Oct 2017.
- "Travelers' Health: Senior Citizens." *Centers for Disease Control and Prevention*, <https://wwwnc.cdc.gov/travel/page/senior-citizens>. Accessed 20 Oct 2017.
- Trujillo, Donna. "Parks and Recreations at the Present and for the Future." Extended Learning Program. Esmond Station K-8 School. Tucson, 18 August 2017.
- "Types of Electricity: 3 Forms of Electricity Available in India." *Your Article Library*, <http://www.yourarticlelibrary.com/electricity/types-of-electricity-3-forms-of-electricity-available-in-india/19742>. Accessed 18 Oct 2017.
- Vann, Madeline. "The 15 Most Common Health Concerns for Senior Citizens." *Everyday Health*, <https://www.everydayhealth.com/news/most-common-health-concerns-seniors/>. Accessed 20 Oct 2017.