
ARTIFICIAL PYRAMMIDS-A MEAN OF CURBIG AIR POLLUTION

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Abstract (10pt)

The city of destiny, Visakhapatnam is producing an estimated solid waste of 1300 tonnes of solid waste a day. GVMC, the municipal corporation is doing a lot of hectic work in transporting the solid waste in collection, transporting, dumping, isolation of species, open burning and incineration in the solid waste disposal plant at Kapuluppada, nearly 15 kilometers away from the town limits. The city is expanding day by day with huge migration of people from rural and urban areas from different parts of the state for livelihood. But, the procedures being adapted today are very cumbersome, leading to a lot smoky and smogy Environment causing a lot of inconvenience for breathing for public particularly in VAMBAY colony and other areas, besides leading to traffic disasters due to poor vision. Also, the increasing Fuel costs, the problems in transporation of waste to and fro, the exhaust gases from vehicles carrying the solid waste etc are the worrying factors. What happened in New Delhi today should be an eye opener for every one. Keeping in view of the SMART CITY status, there is a need to think and implement in a large scale new methods of solid waste disposal and treatment. In this paper we are proposing a novel idea of floating artificial pyramids which gives a smart solution for not only proper treatment but also Energy generation.

Keywords:

Artificial Pyrammids;
solid waste disposal;
incineration;
Fuel cost;
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1. Introduction:

The amount of pollutants in air has been increased enormously right from the days of Industrialisation. After Independence, crores of rupees were allocated in Five year plans meant for investment for the construction of industries which once upon a time considered as the back bone for economic growth of any Nation. Industrialise or perish is the slogan which ran the Nation during those times. At the same time, neither the scientific community, the public, nor the industrialists have taken care of proper disposal methods of solid, liquid and gaseous wastes. Indiscriminate dumping of those wastes ruined the quality of air, water and soil and therefore we are facing the disasters today. In particular, Air quality is becoming a threat particularly in metropolitan cities like Delhi, Mumbai, Kolkata, Hyderabad etc.

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After division of United Andhrapradesh, Visakhapatnam, declared as one of the smart cities is ratified as Industrial hub probably due to good conveyance facilities; availability of tangible and intangible resources. It is expected that nearly one lakh people are getting migrated to this city of destiny every year for the sake of livelihood. As on now lakhs of two wheelers, three wheelers, and four wheelers consuming thousands of liters of Petrol, Diesel and other liquid fuels releasing huge amount of flue gases. Narrow roads, less number of plantations, adulteration of fuels, improper care of vehicular cleanliness are considered as some of the main reasons of vehicular pollution. Besides, tourists from all over the world, presence of holy shrines, naturally formed harbour, serene greenery, mineral resources availability, center of excellences in Education, rich of culture and heritage making the city as the best living place to one and all.

Looking at the extent of sold waste produced, it is estimated that nearly thirteen hundred tones of solid waste being produced to the tune of twenty lakhs of population out of which sad to say one thousand tones are found to be from hotels, the rest being domestic, commercial, and other wastes. To carry away these waste materials, dumping in the sites selected [1], sorting of wastes, isolation of materials for incineration, fuel added costs, the corresponding release of pollutants is making a hell of multiple and cumulative damages to the Environment. Therefore, it is high time to think a novel method of collection of solid waste, and safe way to Energy conversion without much damage to the Environment is required.

In this regard, our paper throws a light in proposing a novel idea of constructing Artificial Pyramids, within the city at selective places, minimizing fuel expenditure and related pollution levels.

2. Research Method:

- I. Identifying the suitable places for construction with a minimum distance of 15km circle
- II. Collection of wastes by present methods in practice with minor modifications like different collectors for different wastes etc (not simply as wet waste and dry waste)
- III. Segregation of material and loading in to Incinerators at the site
- IV. Installation of Power Generation unit in one side of Pyramid.
- V. Waste heat recovery establishment unit

Description of the Pyramids: As shown in the Figure 1 Inside the pyramids (G+5, with an under ground of two floors) half of the area will be allocated for installing the segregation of material, power generation unit installation. The other half will be allocated for commercial establishments, offices etc. Over the four sides of pyramids upper surfaces, Greenery will be planned which gives aesthetic appeal and can be used for construction of public gardens.

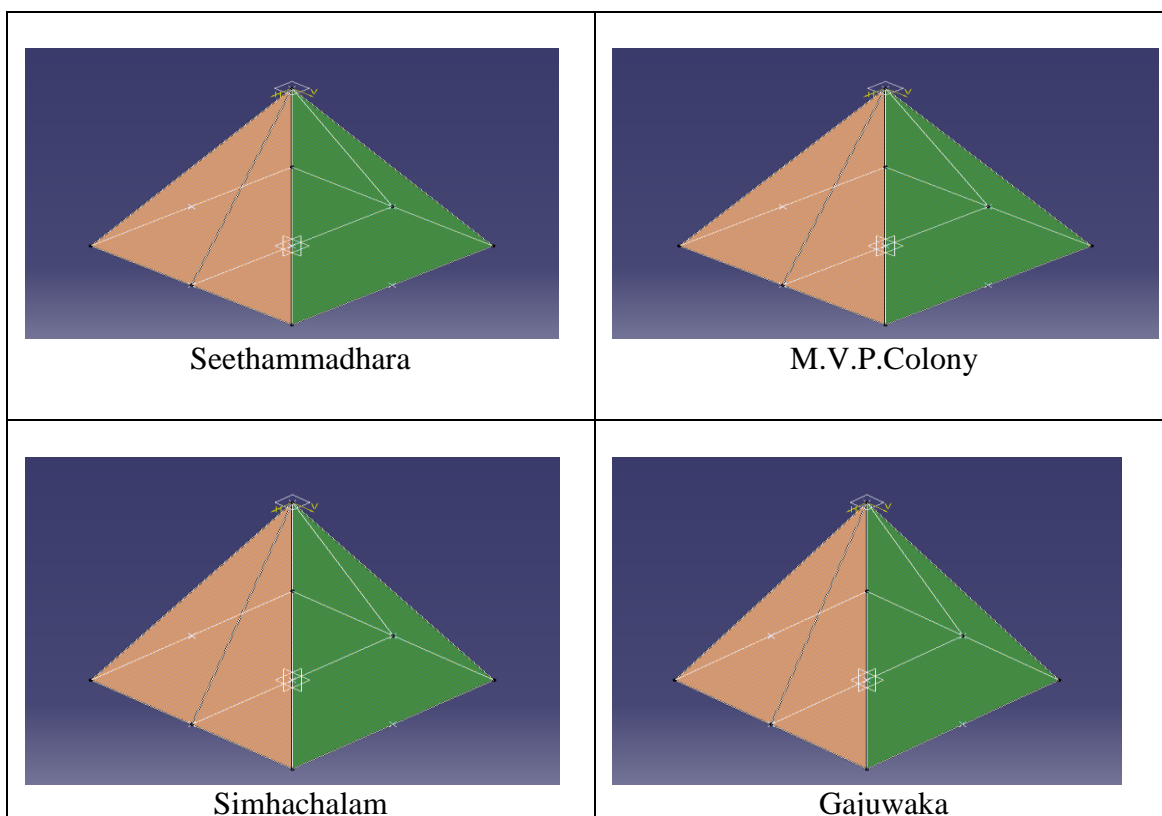


Figure 1. Proposed Pyramids at different area in the smart city, Visakhapatnam

3. Analysis:

Financial Estimations: It is estimated that rupees One hundred and sixty Five crores are being spent every year in metropolitan cities to solid waste disposal and incineration works computing the fuel costs, wages for staff, maintenance etc. If the same amount is spent for the construction of pyramids of convenient height, properly maintained, fuel expenditure is saved as well as environmental quality will be improved.

4. Conclusion: The proposed method offers many advantages. If implemented at strategic points, the pyramids will function to

- ✓ **change the local aerodynamics**
- ✓ **reduces fuel consumption drastically**
- ✓ **generates power from incineration**
- ✓ **useful heat recovery**

The greenery planned gives aesthetic appeal, recreation for and amusement to the public on weekends etc and besides gives financial returns.

Reference:

[1] DPR on municipal solid waste Management for Visakhapatnam Feed back Infra Private limited, August 2016.