

GLOBAL ESCO VISION

We support the zero waste cities initiative and approach i.e. a continuous effort to phase out waste – not by burning or landfilling it. We use technological solutions to clean the environment, do not generate waste in the first place and make the most out of reuse of materials lowering greenhouse emissions.

Our Standards

Conceptual Design and Operational Environmental Principles and Guidelines

- Zero Waste [close to zero landfilling]
- Modular Design [develop as we grow]
- Environmentally Friendly Operations
- 100% powered by renewables sources
- 100% reusable outcome
- High quality recyclable materials
- Total protection of natural assets
- Sustainable Operations
- High quality of life in the City

Operational Key Performance Indicators and Guidelines

- Waste segregation at source
- Fully automatic system
- Low Maintenance system
- High quality of recyclable materials
- Limited visual waste
- Minimized collection and relative traffic activities
- Pests free operations
- Zero Waste
- Maximize the potential revenue streams
- Fully monitored and accountable operations

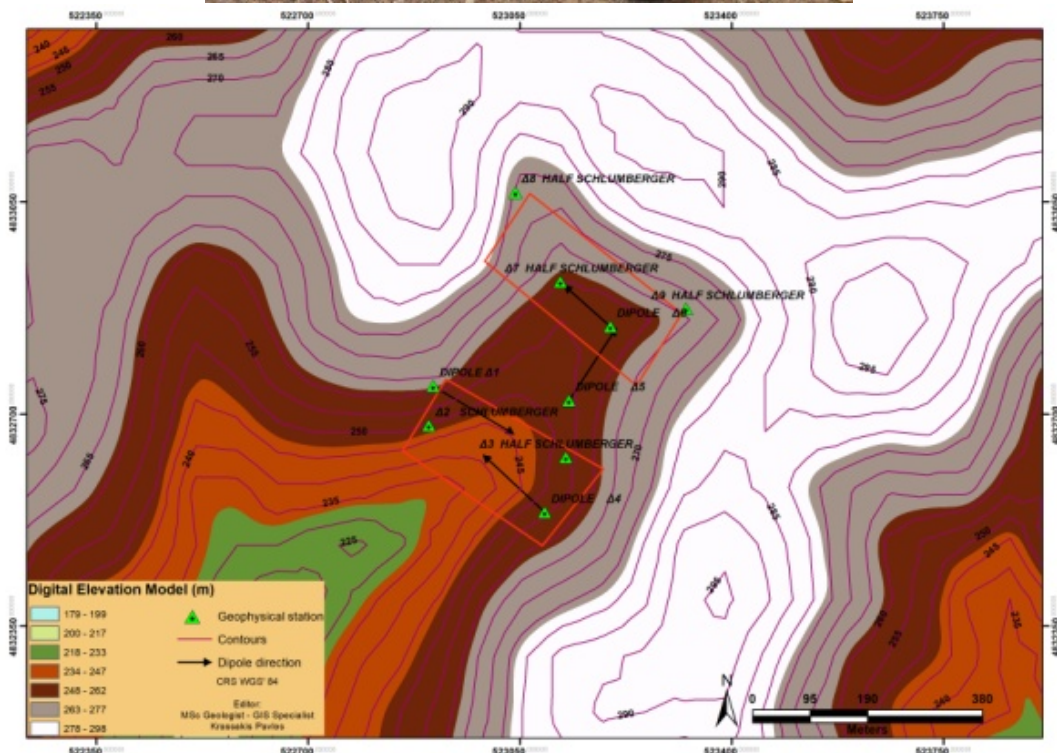
LANDFILL REMEDIATION & ANALYSIS SERVICES PROJECT

EVALUATION & ANALYSIS FOR EXISTING LANDFILL AREAS

1. SURFACE TOPOGRAPHY SURVEY

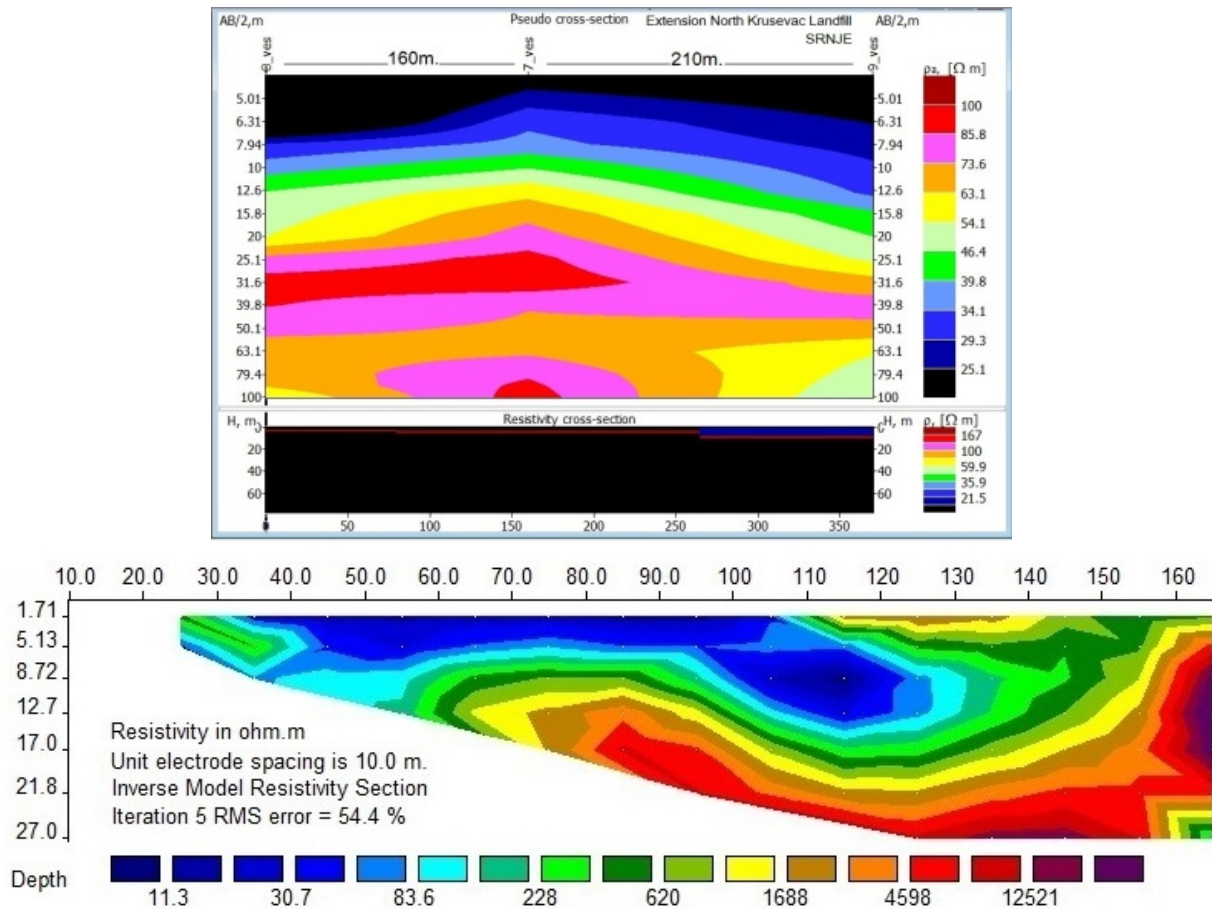
In aim to change the note bad environmental situation of the classic landfill place, we start to monitoring the surface of the free garbage area with special and dangerous topography survey (topography instruments and drone) cause the collapse of the deposits. The product is a new DTM (Digital Terrain Model) of the garbage surface, nominate as : " DGM".





2. GEOPHYSICAL UNDERGROUND RESEARCH

The exploration of the base soil under the note volume of the landfill, will realize with international geophysical methods like Schlumberger and Geoellectrical sections Dipole Dipole in directions around the landfill and to the future extensions. The results will be ready to organize the follow geotechnical pass, with the boreholes drillings and piezometric water level control pipes. Is very important to know the nature of the soil and his permeability of the around liquids : near and distance.



3. GEOTECHNICAL BOREHOLES

In selected points propose to move a drilling rig machine and take core champions from the volume of the deposits. The boreholes must arrive until the basement of the initial soil surface before the first deposit and also some meters in more depth, to meet the healthy orison of the Clay - Sandy Clay, ground. A special Geotechnical laboratory will analyze the champions not only for the "terrain" kind of soil but also about the chemical parameters of temporary "mix garbage".

- In case of extension of the landfill also with boreholes we applicate pitch excavations in surface terrain until depth 1,5 m. to check the organic nature of the soil and the humidity and permeability of the rocks and beds.
- Piezometer tubes will install to control permanently the water level and liquid level possible present in the area by the Darcy law.



4. HYDROGEOLOGICAL STUDY

If water is present a specifically water analysis in laboratory can give exactly the situation of healthy soil water and humidify in area. But if there are presents only "black" liquids" a hydro geological study about hydraulic control of all area perimeter the landfill is necessary to proceed in follow works. These liquids are sure very bad and travel by the gravity in the surface and in part inside the soil, cause their acidify (can easy dissolve other near natural minerals and decompose them). At least all this bad water quantity can transfer to near areas and produce a total pollution in near camps in lower altimeter.



5. CHEMICAL ANALYSIS of CHAMPIONS in LABORATORY

Parameters that we have to know are :

- α) Humidity, ashes, Carbon, Hydrogen, Oxygen, Nitrogen, Sulfur, Chlorine ...
- β) Burning capacity
- c) Metals: Pb, Cd, Hg, As, Cu, Zn, Cr, Ni, Co
- d) Special metals: Sn, Sb, Ba, Mn, Ti, Sr, Mo, V, Se
- e) Inorganics - Oxides : CaO, MgO, Fe₂O₃, SiO₂, Al₂O₃, Na₂O, K₂O, P₂O₅, SO₄, CO₂
- f) Waste Compositions according to law **ASTM D 5231-92/R-2003** : Paper, glass, Pet, films, Textiles, rubber, tires, leather, baby diapers, and all other compose materials ...

6. ORGANISE all INFORMATIONS in G.I.S

Upload all data into a **G.I.S** (Geographic Information System) to can follow the changes in real time in landfill. In time can decide the best way to react in Parameters that become dangerous and prevent pollution, burnings, gas escapes or other disasters. At least, all the proposes step by the step, conclude to the logical decision for a sanitation of an existing Landfill place and organize in optimum way the management of the current today municipal waste.

LANDFILL REMEDIATION

Problem: The Municipal solid waste landfill has been filled or crossing the limits.

Solution: We provide a remediation solution for the landfill.

We will use a mobile solution to wrap and bale the old waste to 1 tone bales with a remarkable 1:2 to 1:4 compacting ratio.

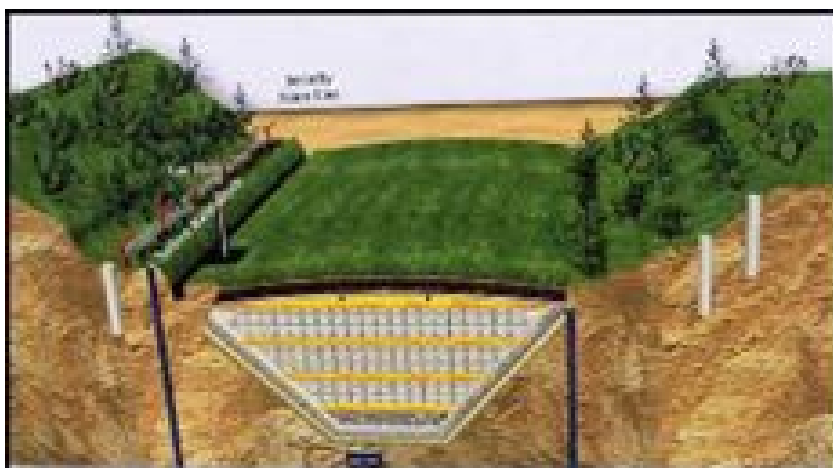
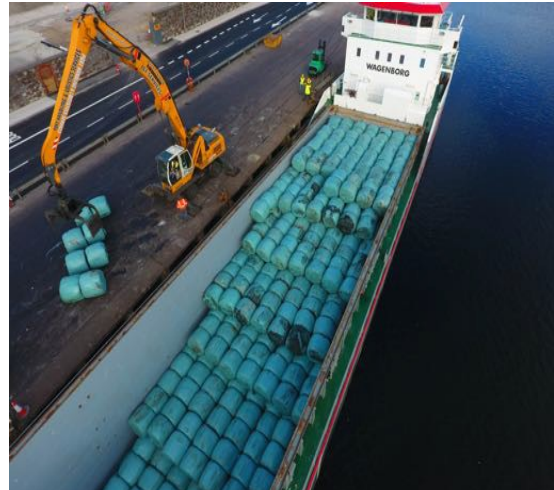
The current landfill will be emptied and can be reused.

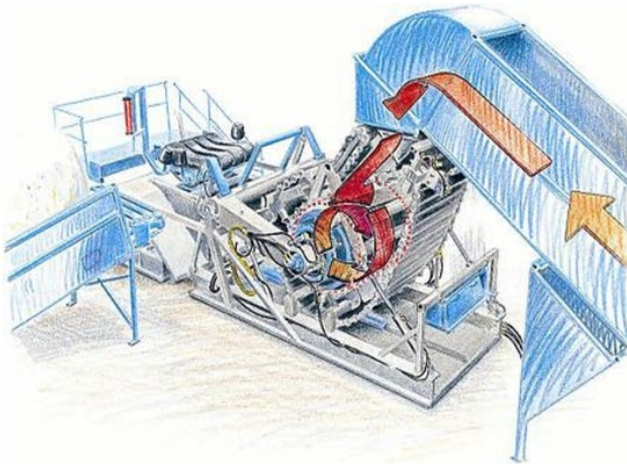
The bales can be used to create a stable ground for various projects, and/or be sold to recycling and Waste-to-Energy facilities to produce energy.

The solution is offered as a service on a bale delivered basis rate.

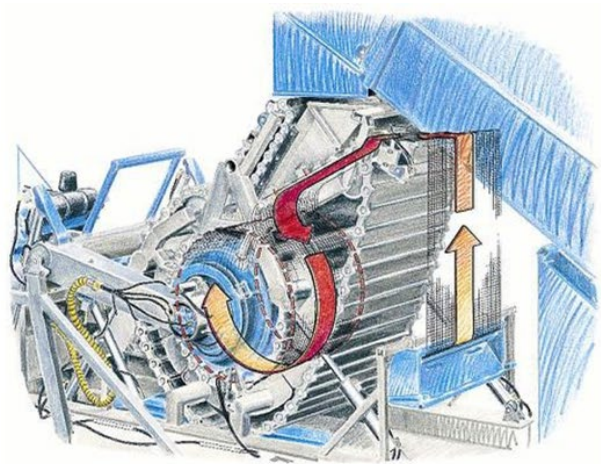
Benefits:

- Significant volume reduction 1:3 or 1:4
- No leachate during round baling
- Bale contents are homogenized
- The hazardous liquids creation is stopped
- Frees the land to be used for real estate
- Bale chemistry renders contents biologically inert
- No methanogenic activity inside the bale
- No fires/explosions, almost zero odours
- HDPE-netting for bale stability
- LLDPE-foil wrapping to seal bales air & water tight
- Bale contents retain original high-calorific value
- High density of round bale ~1 tone/bale
- Landfill land can be used again
- Mobile integrated system

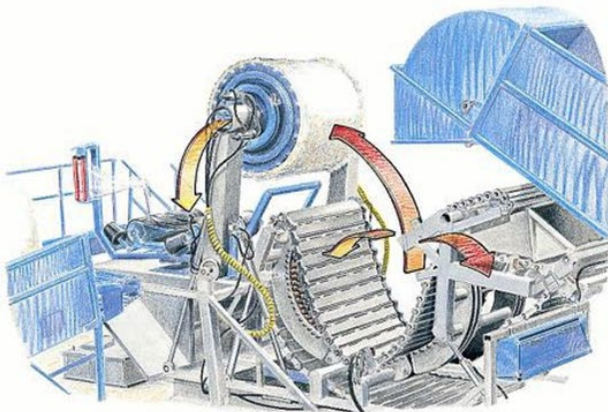




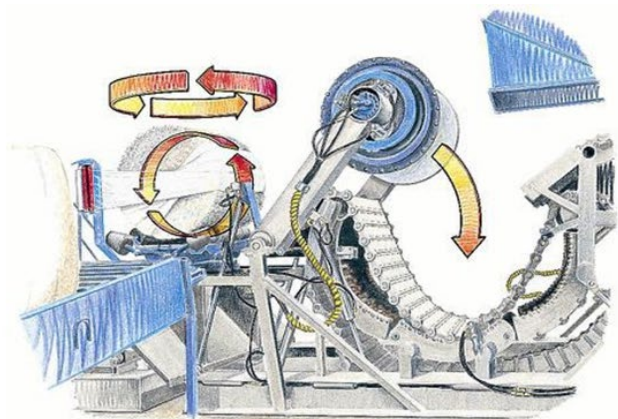
1. The material is fed into the bale chamber until full pressure is reached.



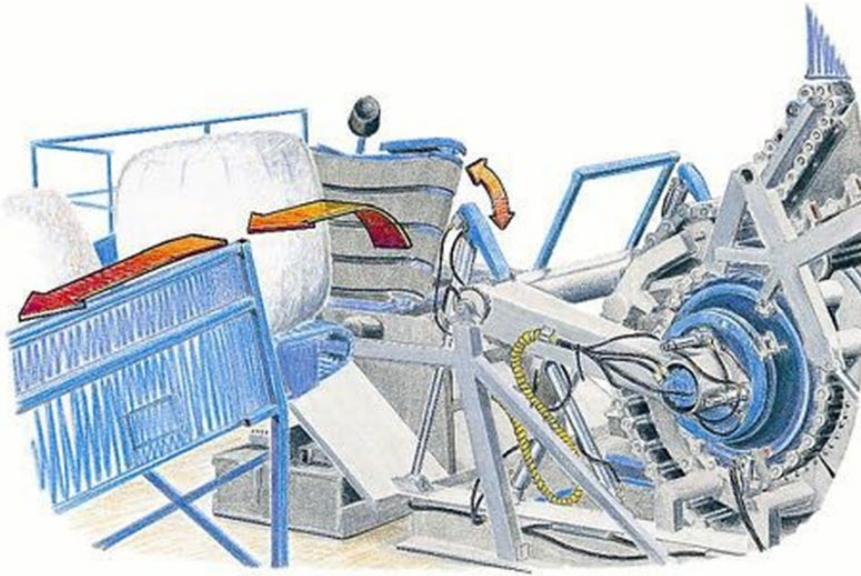
2. To keep the shape of the bale, a net or a film is fed into the chamber



3. The bale chamber opens up and the bale is transferred to the wrapper unit.



4. While bale is wrapped, the baler arm returns to start position for new bale formation.



5. The wrapped bale is now fed on to the bale conveyor. The whole process lasts 2 - 3 minutes and is fully computerised.