YSB

Ya'acobi Brothers Group

ARIEL WIMASOR
Traffic & Parking Control

MENOLEAD HERUT
Systems

DEKEL
Infrastructures

PIKA
Infrastructure & Development

LEAD CONTROL
Security & Control Systems Integration

DYNAM TECH
Technologies

MENOLEAD HERUT
Maintenance

greennet
Recycling & Waste Treatment

D&I
Water & Resources Management

MENOLINX
Smart Lighting Systems Control

Group Profile

About Us:

YSB is one of Israel's leading infrastructure, technology, contracting and business entrepreneurs. The group, now a public company includes a dozen companies that develop, plan, build, and integrate innovative solutions for national and international clients in the government, private, and public sector.

Areas of Activity

YSB Group provides it's customers with a wide variety of solutions operating as a one-stop-shop for their needs. Main areas of activity:

- Vertical Construction
- Roads and Bridges
- Electro-mechanical systems
- Electricity, lighting, and communication infrastructure.
- Civil engineering and earth works
- Soil Remediation and Water Treatment

- Parking management
- Traffic Control and ITS systems,
- Control, automation, & security systems.
- Smart city solutions.
- Waste management.
- Non-revenue water detection and repair
- Water infrastructure management.

Group Structure

YSB
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Environmental Division

- NYTERRA
- greennet — Recycling & Waste Treatment
- Greensoil — Contaminated Soil and Sludge Treatment

Execution and Maintenance Division

- D&I — Water & Resources Management
- MENOLEAD HERUT Systems
- MENOBUILD
- PIKA — Infrastructure & Development

Technological Division

- PARKING 38
- LEAD CONTROL — Security & Control Systems Integration
- MENOLINX — Smart Lighting Systems Control
- ARIEL WIMASOR — Traffic & Parking Control

Some figures

- The group is been operating since 1974 as a family owned business. Now a public company traded on the Tel Aviv Stock Exchange.
- Today YSB employs over 850 employees and manages over 3000 in numerous projects.
- The group turnover is more than $180M making it one of the biggest in Israel.
- The group has one of the most diverse span of activities in the construction and infrastructure sector in Israel with each company being significant in its field. This allows us to truly be a one-stop-shop for many different projects.
- The groups is in continuous and significant growth in the last 5 years.

Our Valued Customers

And many more!

Smart City Technological Solutions

YSB
Ya'acobi Brothers Group

| **ARIEL WIMASOR** Traffic & Parking Control | **MENOLEAD HERUT** Systems | **DEKEL** Infrastructures | **PIKA** Infrastructure & Development | **LEAD CONTROL** Security & Control Systems Integration | **DYNAM TECH** Technologies | **MENOLEAD HERUT** Maintenance | **greennet** Recycling & Waste Treatment | **D&I** Water & Resources Management | **MENOLINX** Smart Lighting Systems Control |

Why Us?

- **Presence and understanding:** YSB has been operating in the municipal eco-system from it's establishment and <u>over 40 years</u> and has an intimate knowledge of the requirements and needs (security, lighting, traffic and parking, water, central control system).

- **Different approach:** YSB understands that municipal infrastructure upgrades are a long and tedious process. As such, YSB presents a different approach by implementing it's solutions using the <u>city's current infrastructure with only minimal changes</u>.

- **The city's natural growth:** YSB's solutions can <u>be continuously upgraded</u> in accordance to the natural growth in population, changes in requirement, and available budget.

- **All included:** YSB offers <u>complete smart city solutions all under one roof</u> including the central control unit, sensors and end-solutions, and full maintenance and operation services of the highest quality.
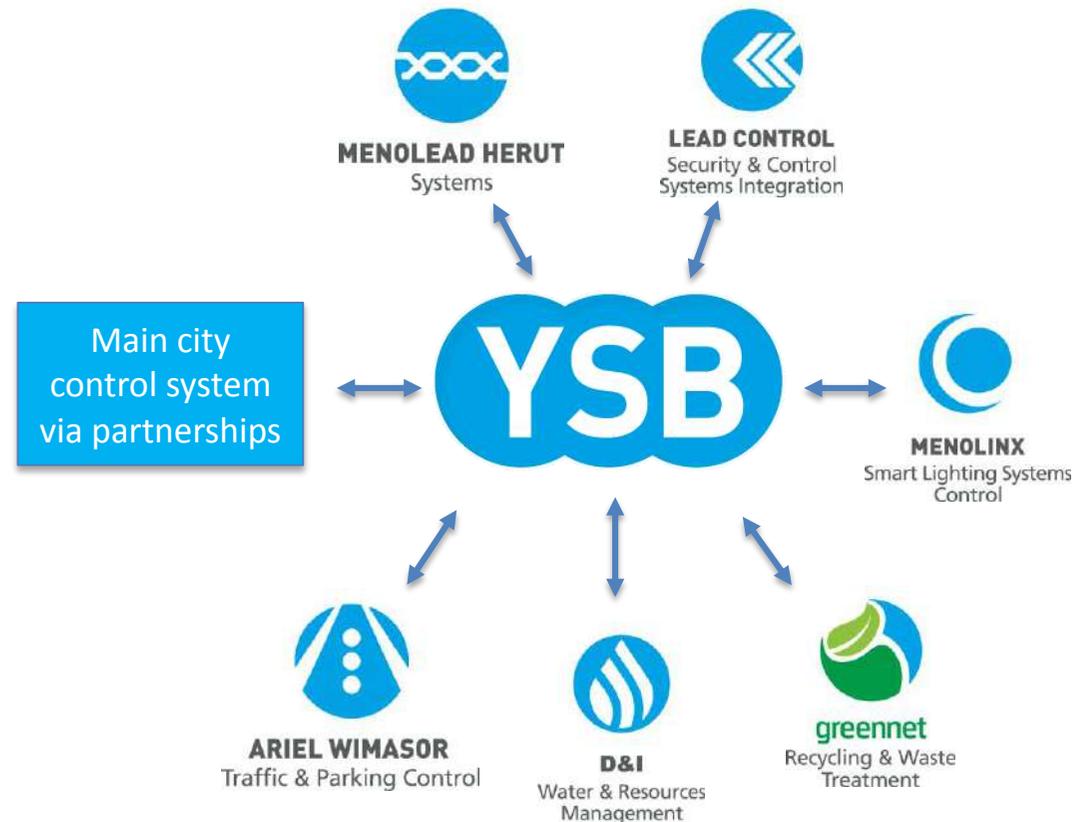
<u>YSB: Complete Smart City Solutions</u>

Smart City Solutions

YSB provides a one-stop-shop for smart city infrastructure.

These include:

- **A central control, analytics and BI system** which communicates and operates all of the sensors/end-solutions to provide a full analyzed picture of the city's assets
- **Cyber Security solutions** by Lead Control
- **Smart lighting systems** by Menolinx
- **Smart Pole** by Menolinx
- **Electrical Vehicle Charging** by Menolinx
- **Smart traffic and parking** by Ariel Wimasor
- **Smart water management** by D&I
- **Waste separation solutions** by Green-Net
- **Smart Municipal Waste** by Menolead

Main city control system via partnerships

MENOLEAD HERUT Systems

LEAD CONTROL Security & Control Systems Integration

MENOLINX Smart Lighting Systems Control

ARIEL WIMASOR Traffic & Parking Control

D&I Water & Resources Management

greennet Recycling & Waste Treatment

Cyber and Security Systems

LEAD CONTROL
Security & Control
Systems Integration

Cyber Security for City Infrastructure

Cyber security is mostly related to In the Information Technology (IT) and Software. However this is seldom not taken into consideration when discussing Operational Technology (OT) which manages the infrastructure of complete cities. Thus although the information of citizens may be securely guarded , the lighting, traffic and other crucial city resources are open for sabotage.

Lead Control Security Division is offering solutions to tackle this uncharted territory by providing cities with the Cyber Security solutions to protect their infrastructures. Our solutions block out cyber threats and secures the city's infrastructure from sabotage and severe damage.
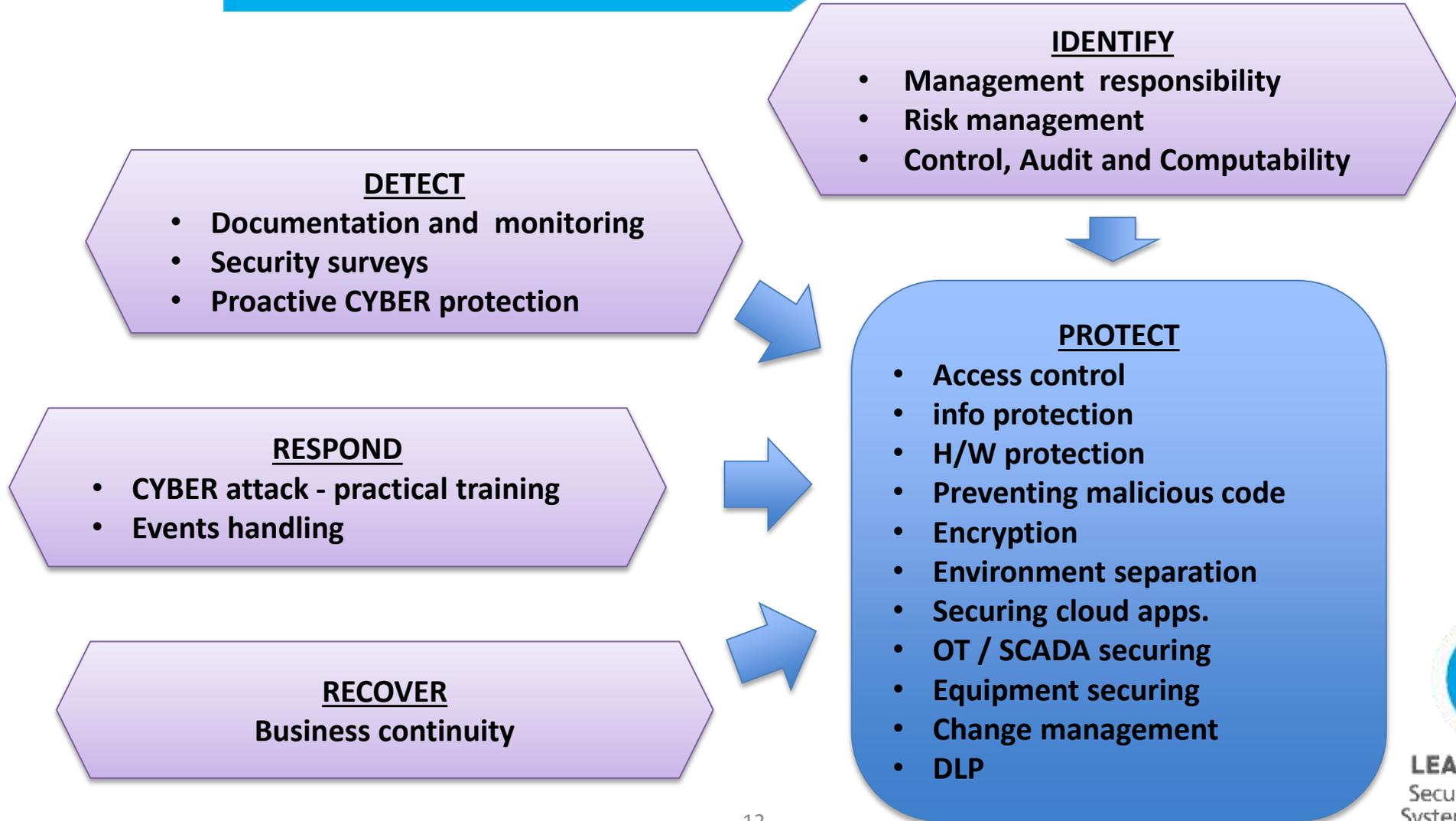
Cyber security project steps

- IT & OT on Site survey.
- Defining threats and vulnerabilities on the system (IT, OT, SCADA network, physical security, Command & Control center, Data center, etc.).
- Issuing a list of steps to be taken for strengthening the Cyber security in the aspect of organizational policy and procedures, technological security tools, trained staff.
- Periodization between solutions – threats and budget driven.
- Implementation in parallel.
- Continues control and practical training for preserving and deepening knowledge and capabilities.

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LEAD CONTROL
Security & Control
Systems Integration

Policy and procedures according to local law

Physical security shield

Cyber OT Training

360º OT Cyber Shield

OT Oriented FW

IDS Anomaly detection

Process Oriented Anomaly detection

The Complete Solution

IDENTIFY
- **Management responsibility**
- **Risk management**
- **Control, Audit and Computability**

DETECT
- **Documentation and monitoring**
- **Security surveys**
- **Proactive CYBER protection**

RESPOND
- **CYBER attack - practical training**
- **Events handling**

RECOVER
Business continuity

PROTECT
- **Access control**
- **info protection**
- **H/W protection**
- **Preventing malicious code**
- **Encryption**
- **Environment separation**
- **Securing cloud apps.**
- **OT / SCADA securing**
- **Equipment securing**
- **Change management**
- **DLP**

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LEAD CONTROL
Security & Control
Systems Integration

Security Solutions Offered

LEAD CONTROL
Security & Control
Systems Integration

Command and Control Centers

Entrance Control

CCTV

Alarm Systems

Electric Fencing

PA Systems

Smart Lighting Solutions

MENOLINX
Smart Lighting Systems
Control

Smart Lighting Systems

MENOLINX
Smart Lighting Systems
Control

Advanced and innovative lighting management solution (indoor / outdoor applications) built to monitor, control and optimize each light source to achieving maximum efficiency. The system is composed of a controller (LampID™) and back-office system (LampView).

- Real time continuous monitoring of light activity
- Control of hundreds of individuals systems.
- Automatic energy optimization using unique energy saving algorithm.
- Maintenance program includes supervision and alerts.
- 10,000's installations worldwide!

Control
Monitor
Optimize
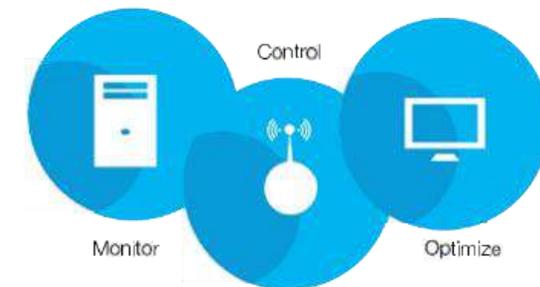
Energy saving of 60-80% in contrast to conventional lighting systems

Smart Pole

Lead's Smart Pole solution introduces a fresh, new approach to the common streetlight by changing its functionality from being an ordinary light source to becoming a central asset for smart city applications.

The Smart pole can simultaneously manage a wide variety of systems which are all installed on the same asset. This approach significantly increases the uses of each pole while reducing the installation cost of the individual components. The space on the pole can also be rented for different purposes such as vehicle recharge, video commercial, etc.

The basic solution includes:
1. Smart LED lighting
2. Surveillance camera
3. Air pollution meter
4. Smart charger (patented)
5. Option to add other options

In Addition

Additional options:
1. WIFI modem
2. Digital signaling
3. Public announcement systems
4. Climate meters
5. Parking recognition systems
6. G4 cellular antenna
7. Utility meters

And many more

Air pollution sensor

RF/PLC/GPRS/WIFI

LED light source 24V-150V

Surveillance camera

500

110

6000

Charging electric Vehicles and phones

USB

2000

MENOLINX
Smart Lighting Systems Control

Vehicle Charging

Menolinx Smart Lighting Systems has developed innovative technology which allows to use the average light pole for use for charging electrical vehicles.

Vehicle Charging

Infrastructure

User

A user orders a power or time quota

Charging of vehicles, motorcycles and bicycles

Municipal Central Control

Local controller which manages the electricity distribution between lighting and charging

Smart Traffic and Parking Solutions

ARIEL WIMASOR
Traffic & Parking Control

Technology:
Falcon – Main Features

Falcon is an Intelligent traffic system (ITS) which has been designed, developed and implemented by Ariel Wimasor. Main Features:

- Falcon is designated to the **urban environment**.
- The system can control street-bound controllers even if their communication protocol is not known via a "**remote control unit**".
- Can include **unlimited quantity of predefined parameters** which can allow changing the interchange conditions from the control room. Adds significant versatility.
- Enables all street-bound sensors and traffic lights to be **inter-dependent** which enables unique traffic control programming.
- **Internal arithmetic module** enables the traffic engineer to operate different traffic programs as a function of sensor input (semi-adaptive programming).
- Can be used **with any kind of traffic sensor** (e.g., loop, video, priority, Bluetooth, etc.).
- Can connect to public transportation systems and enable **active priority** according to a predefined conditions.

Technology:
Falcon – In Detail

- Operation based on an easy to use yet secured **HTML5 interface**.
- **Connects and displays** information from street-level sensors, traffic lights, etc.
- **Defines** new interchanges using a simple drag-and-drop method. Can add endless control parameters and endless predefined plans.
- **Logs** real time information, stores historical data and allows deep analysis.
- **Allows** priority plans, green waves, management of special events.
- Connects, operates and displays **on-street cameras**, road signed and more.
- Can be integrated onto the city's **central control room.**
- The system is **continuously upgraded.** City specific requirements can be easily added.
- **Numerous city installations!**
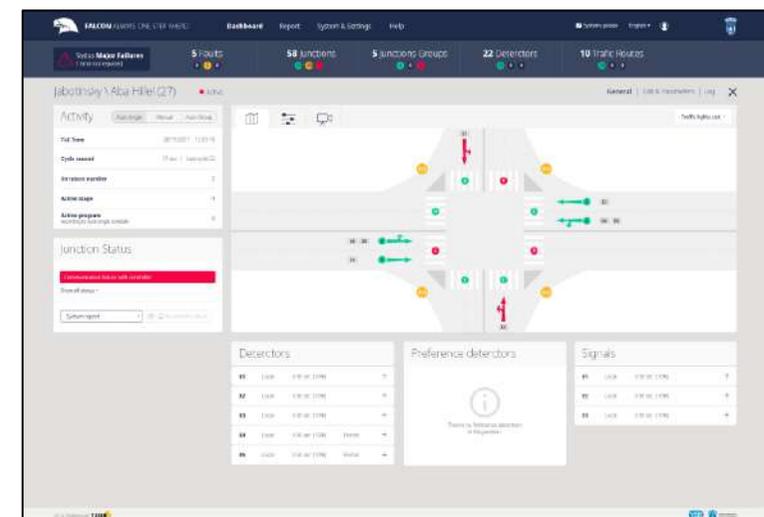
Enforcement

ARIEL WIMASOR
Traffic & Parking Control

Bus Lane Enforcer™ is an efficient and cost-effective bus-mounted system for prosecuting and deterring unauthorized use of designated bus lanes. Violating vehicles license plate are captured and automatically analyzed in the back-office application at the moment it is most needed with no intervention by the bus operator.

Parking Inspector™ is a GPS and map based detection system that identifies parking violations, logs the details of each violation event, and provides video and photo evidence which can be used in court.
The system operates in both a mobile and fixed application.

Enforcement Deputy™ is a state-of-the-start mobile video system that operates during patrol. The system performs continuous up-to-near 360° recording, enhanced by license plate recognition. Data sent back to headquarters undergoes big-data analysis and pattern research by a sophisticated back-office application.

Technology:
LPR and Parking Solutions

Parking management solutions using the company's own License Plate Recognition (LPR) unique software. The system's main features:

- Identification and access control
- Visitors management (pre registration and authorization).
- Security
- Internal parking management
- Hundreds of systems installed

Ariel Wimasor was the first company in Israel to introduce LPR technology nationally
The company installed and maintains equipment and technology in 100's of lots nationwide

Smart Parking Allocation App

ARIEL WIMASOR
Traffic & Parking Control

The Smart Parking Allocation is a system that allows parking lot managers to optimize the use of their facility. The system continuously monitors the parking slots status and allocates available spaces to both subscribed and occasional users according to a predefined logic.

The back-office software can be defined to enable the users to freely choose their preferred slot, differentiate the cost of attractive slots, or automatically designate specific pinpointed spaces with no user intervention. The Smart Parking Allocation system significantly reduces the traffic inside the lot reducing driving time, air pollution, and waste.
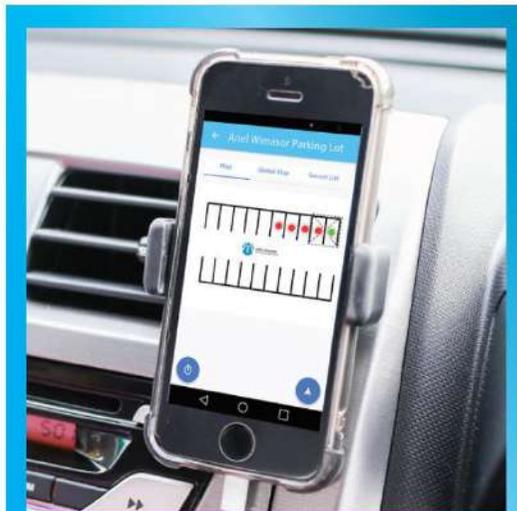
Smart Parking Allocation App

ARIEL WIMASOR
Traffic & Parking Control

LPR Detect »

A user registers to the service using their vehicle's license plate number and payment information (where required). The user is identified in the parking lot entrance by the LRP

Navigate »

A mobile app navigates the user to the designated or chosen parking slot (depending on the system's configuration).

Park »

A battery operated floor-based sensor with a lifetime of 5 years identifies that the vehicle has arrived to the parking slot.

Confirm

The vehicles presence is authenticated, the parking slot is "captured" and the parking time begins. The app assists the user to easily return to the parking slot when required.

Parking Management Applications

Central entrance control system for the city's secure compounds (pumping stations, water reservoirs, transformer stations, central security offices.

Management of car pools (waste trucks, city security, service vehicles and more).

Control and management of parking facilities on the municipal level. Diverting traffic to parking lots with available spaces

ARIEL WIMASOR
Traffic & Parking Control

Smart Water Management

D&I

Water & Resources
Management

Water/Gas Infrastructure Management

D&I is a one-stop-shop for management of non-refundable water (NRW) and other fluid losses through detection, rehabilitation and maintenance of pipe network. The company performs:

- Reduction of physical loss: detection of leaks and reservoir overflow.
- Reduction of administrative loss: biased reading of actual use and theft.
- Preventative losses service of water systems: design and construction of DMA's, continuous monitoring using digital loggers, material balances, quality assurance of repairs.
- Detection of connections between sewage and drainage.
- Trenchless pipe rehabilitation (unique and exclusive technology operator).

Full Project Package

D&I offers a full project package to municipalities, utilities and the process industry beginning with a survey of customer needs, detection of the current status, providing a complete repair plan, implementation of preventative systems and technology and performing ongoing maintenance.

Understanding the requirement and future goals → Pipe detection and report → Design of an action plan to reduce NRW to goals → Implementation of data loggers and DMA construction → Continuous maintenance

Design of an action plan to reduce NRW to goals →
- Pipe cleaning
- Pipe replacement
- Pipe rehabilitation

Detection of water, fuel and gas losses

Detection of physical loss:
- Via sound and frequency changes, gas correlation, hydrophones, specialized laboratories.

Detection of administrative loss:
- Via unique software and other methods.

Full management of pipe infrastructure:
- Based on information analysis received by different data loggers (pressure, temperature, flow, etc.).

**Detection of sewage-drain cross-connections:**
- Via smoke generators.

Trenchless Pipe Rehabilitation

D&I
Water & Resources Management

D&I operates a wide variety of trenchless pipe rehabilitation techniques (in all pipe diameters and types) which extend the pipe's lifetime for 10's of years. All of the solutions are qualified for use with drinking water.

Detection of the leak and access to the pipe. Pipe preparation (cleaning)
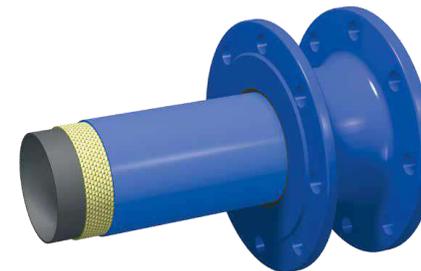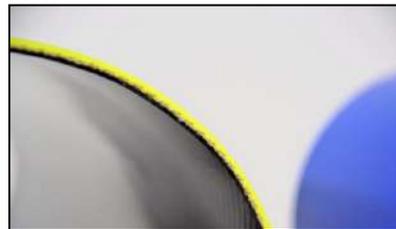
**Insertion of an Internal "sleeve"**
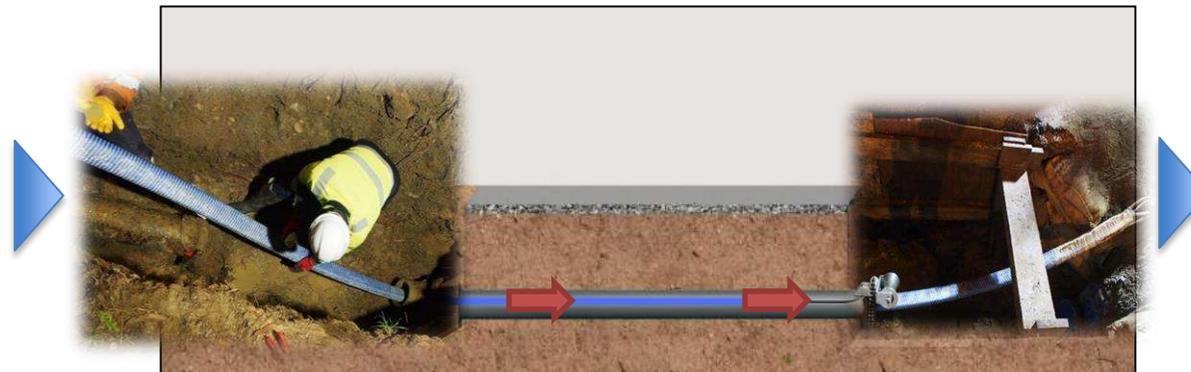
Returning the network to operation

District Metering Area Operation and Maintain.

District Metering Areas (DMA) are defined enclosed areas in the municipal water network that are continuously monitored. D&I conducts construction, operation and maintenance of DMA's on a success based model where is it judged by it's capability to retain low NRW conditions year-round.
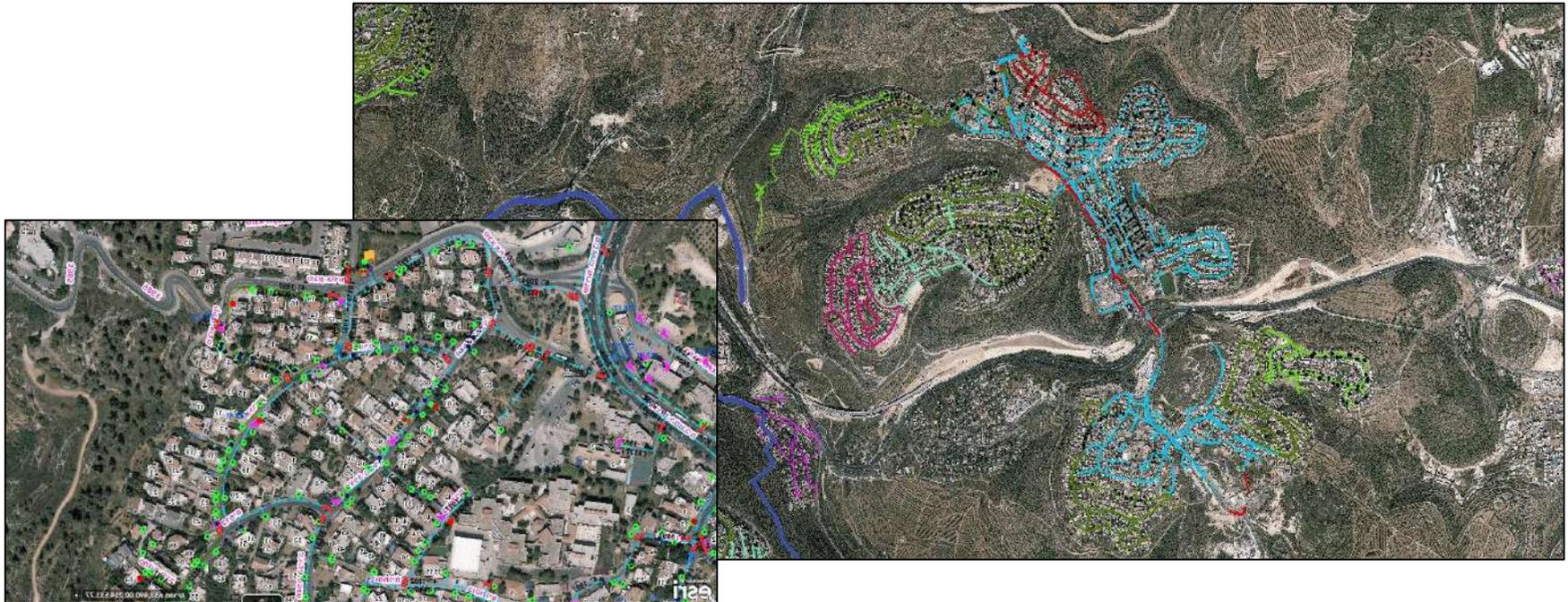
Smart Waste Solutions

greennet
Recycling & Waste Treatment
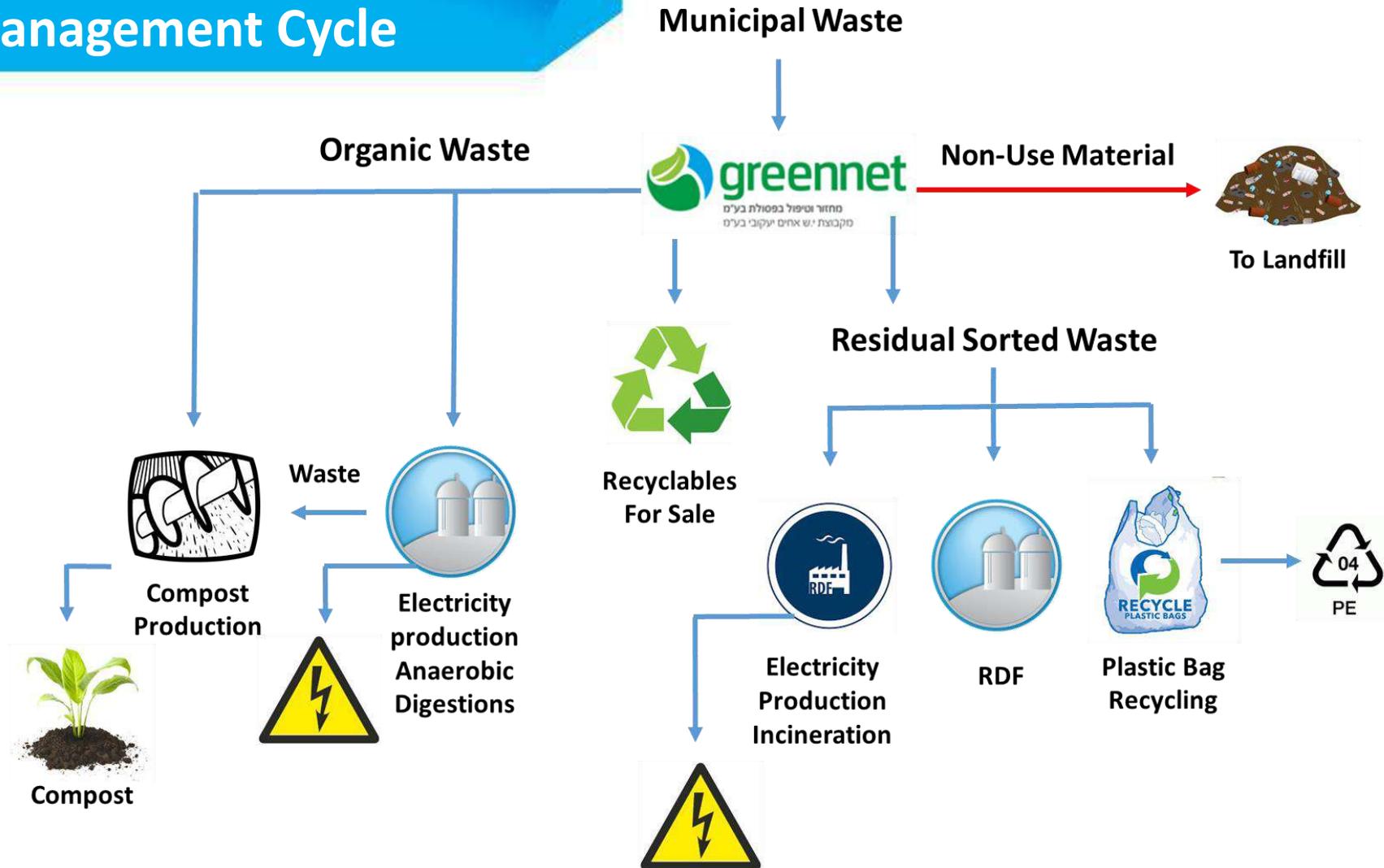
MENOLEAD HERUT
Systems

Company Profile

Green-Net Ltd Plans and develops smart solutions for recycling, waste treatment and environment protection.

Green-Net is a leading company in Israel providing tailor-made solutions for the full waste management cycle. After receiving municipal waste Green-Net can provide full solutions for sorting plants, waste-to-energy plants (anaerobic digestion, incineration and gasification), compost plants and unique recycling plants according to the customers needs.

The Waste Management Cycle

Municipal Waste

Organic Waste

greennet
מחזור וטיפול בפסולת בע"מ
מקבוצת י.ש אחים יעקבי בע"מ

Non-Use Material

To Landfill

Residual Sorted Waste

Recyclables For Sale

Waste

Compost Production

Electricity production Anaerobic Digestions

Compost

Electricity Production Incineration

RDF

Plastic Bag Recycling

RECYCLE PLASTIC BAGS

04 PE

Green-Net MSW Sorting Plant

greennet
Recycling & Waste Treatment

In →

← **Out**

Smart Municipal Waste

Solution options:

- Using buried waste bins implemented with a level sensor which transmits the level of waste found in the bin.
- Connecting the waste-collection trucks with GPS trackers to monitor their routes.
- Connection to a central control network.
- Operation instructions can be collected and given using a simple phone application.

Result:

- Significantly increasing the efficiency of waste collection (only full bins are collected).
- Continuous monitoring of waste-collection trucks and optimizing their travel routes.
- Saving 25-30% of operation costs!

Thank you

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