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UNIVERSITÀ DI BOLOGNA

Sustainable green solutions in urban landscape

ALBERTO MINELLI

DISTAL

AREA PARCHI E GIARDINI

Working group

- 1 assistant professor
- 2 research assistants
- 1 phD student

MAJOR FIELDS OF STUDY

-landscape design;

-historic garden restoration;

-urban environment research;

-tree stability evaluation;

-management analysis of green areas;

-golf courses tree inventory;

-analysis of turfgrass footprint in golf courses.

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SUSTAINABILITY'

- Economy
- Landscape
- Physiology
- Ecology

Some solutions, but are there sustainable?

Landscape

- What is beauty?
- Beauty to preserve
- Ugliness to hide
- Connecytion between different styles

What is beauty

LANDSCAPE
What to preserve, what to hide

“Nobody wanted to see the Aston DB5 destroyed in Skyfall. At least **it was** a miniature!”

Nobody, owner excluded, worries for Multipla damage. Ai least **it was NOT** a miniature!

PHYSIOLOGY

Ecology

In 70': a dump

1989: a golf course

A tree:
Physiology, needs, maintenance

Different country, different practise

But the tree nmeeds always the same care


éral
supermercati


RANGE ROVER
BT 973RL


MAXIMUM


FIORI


POSSIBILE
CADUTA
RAMI


RUGH
RICE

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agip kco

Bolashak Green Shelter Belt Project
Project Update
16th September 2011

www.agipkco.com

eni

Introduction – House Keeping

- Location – Samal Office VC Room
- Toilets
- Alarms and Muster
- HSE Leadership Tour Activities
- Water

The Legal Framework

- According RoK law and Regulations, Green Shelter Belts shall be planted with sanitary functions between any industrial installation and residential quarters and/or human settlements along Sanitary Protection Zone (SPZ) perimeter.

- Bolashak's SPZ, identified as the zone between On-shore Processing Plant (OPF) and Residential areas/ inhabited locality, was approved in year 2005.

- Compliance with Schedule 4 to Emission Permit No 0056430 for Nature Use Conditions of 10-12-2011 for the 2012 Emission Permit,

Project Strategy : Project Area

Project Strategy : Execution Phases A + Phase B (Postponed)

PHASE A = 14.2 ha

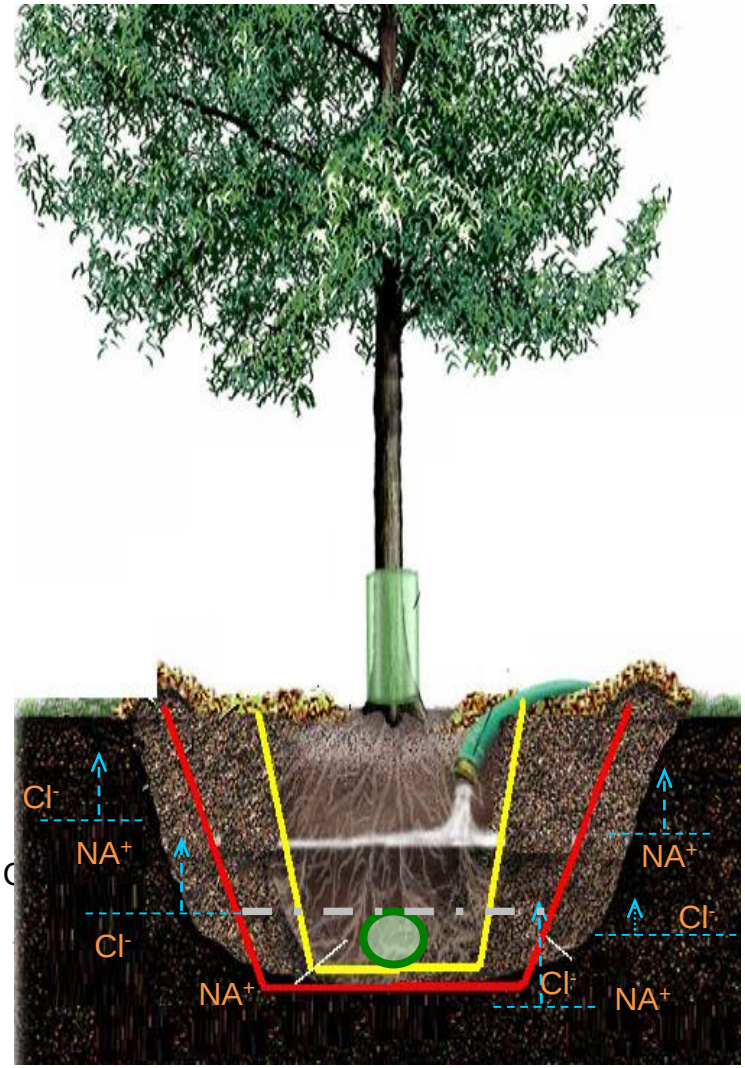
PHASE A+B = 35 ha

Project Strategy: “Zero impact on ground-water”

- Zero impact of Irrigation on project area groundwater

Planting in PVC coated trenches and drip -irrigation techniques guarantees Zero impact on groundwater

Current Progress



Drainage Pipe

Project Completion - SAMAL

- 189 Hardwood Trees Modules (180 x 1.5m) be planted
- Specific planting layout guarantees maximum wind speed reduction and optimal performance of sanitary services.

Trees & Shrubs to be planted in October / November 2011

Trees

	Latine name	Common name	Total
CODE	**TREE SPECIES FOR EBH**		**n.**
F3	*Fraxinus lanceolata*	**Green Ash**	900
P4	*Populus pyramidalis*	**Poplar**	500
U3	*Ulmus laevis*	**Russian Elm**	900
S1	*Salix alba*	**White Willow**	400
-	*Acer negundo*	**Maple Ash**	800
Total			**3500**

Total Trees & Shrubs

= 137,200

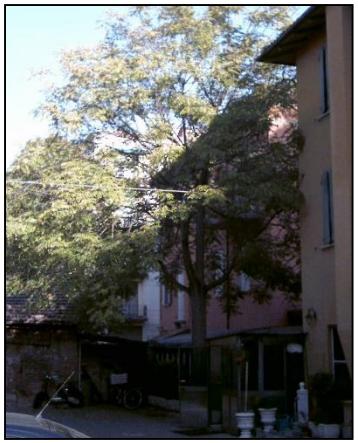
Shrubs

	Latine name	Common name	Total
CODE	**SHRUB SPECIES FOR EBH**		**n.**
ca	*Caragana arborescens*	**Siberian Peashrub**	2300
co	*Cornus alba*	**Siberian Dogwood**	8500
eo	*Elaeagnus angustifolia*	**Russian Olive**	45000
lt	*Lonicera tatarica*	**Tatarian honeysuckle**	3750
sj	*Syringa josikae*	**Hungarian Lilac**	2000
ta	*Tamarix ramosissima*	**Saltcedar**	25000
-	*Spiraea media*	**Meadow Sweet**	1750
-	*Amygdalus nana*	**Dwarf Russian almond**	1900
-	*Sambucus racemosa*	**Red Elderberry**	2000
Total			**92200**

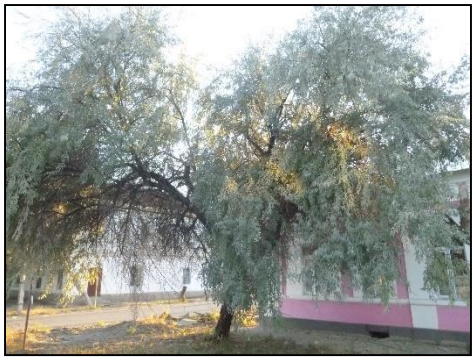
	Latine name	Common name	Total
CODE	**SHRUB SPECIES FOR EAS**		**n.**
ha	*Haloxylon aphyllum*	**Black Saxaul**	21000
ta	*Tamarix ramosissima*	**Saltcedar**	20250
-	*Populus Kazakhstani*	-	250
Total			**41500**

Tree Species

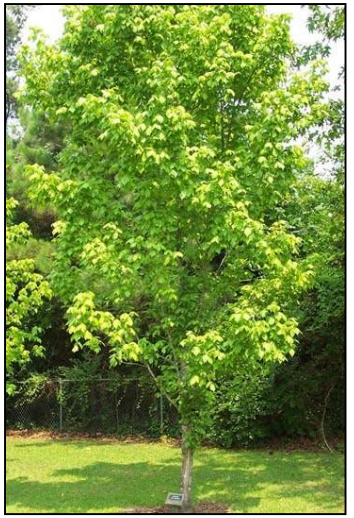
Green Ash



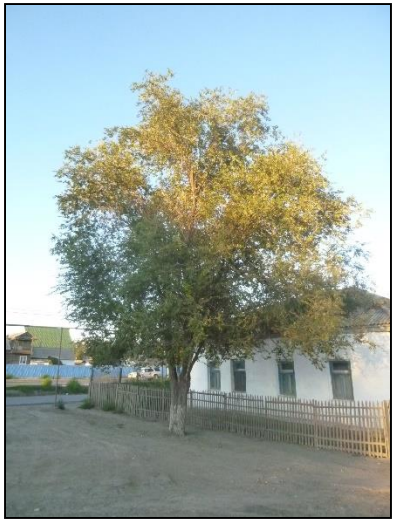
White Willow



Maple Ash



Russian Elm



Poplar

Shrub Species

Black Saxal

Meadow Sweet

Tatarian Honeysuckle

Hungarian Lilac

Red Elderberry

Dwarf Russian Almond

Saltcedar

Russian Olive

Siberian Dogwood

Siberian Peashrub

Project Completion : Tree Nursery

- **Tree Nursery**

  A key feature of the project will be a Tree Nursery

- The Tree Nursery – commonly known as **Afforestation area**

1 - 10 Sector with Gullies (long ter

11 - 14 Sector on PVC (short term stock)

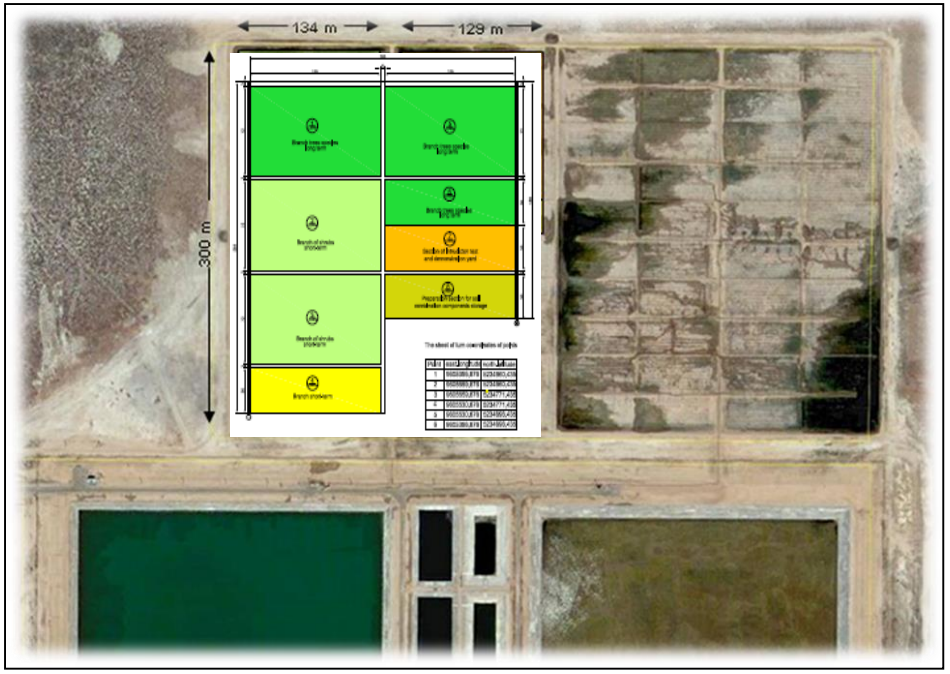
15 Experimental Sector (long term stock)

Tree Nursery (Project Plans) 2011

- # Tree Nursery

A key feature of the project will be a Tree Nursery

Current Progress



Project Strategy : Tree Nursery

Photo 1: Ongoing Earthworks

Photo 2: Tree Nursery Surface Leveling

Photo 3: Humus (Chernozem)

Where the trees (still) have no name

Grazie per l’attenzione

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