

LANDSLIDES IN URQUIZA PARK: THE USE OF PET FIBERS TO AVOID THE MOVEMENT OF HILLSIDES

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2023

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INTRODUCTION



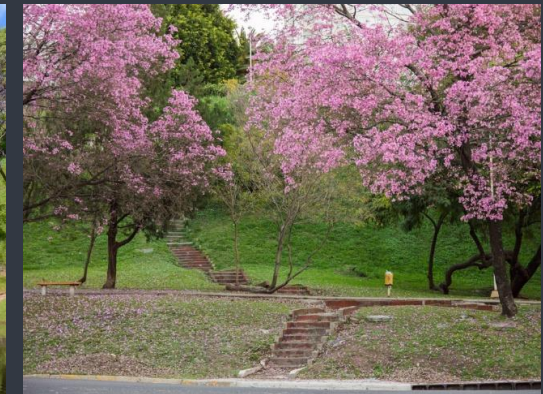
- INTRODUCTION

THE CITY OF PARANÁ

- The capital of the province
- 391,962 Inhabitants
- 137 square kilometers of surface

THE URQUIZA PARK

- One of the most important green areas in the city
- 0.44 square kilometers of surface



- INTRODUCTION

THE ISSUE



Deterioration of Urquiza Park, which is
the main tourist and natural area of
Paraná



- INTRODUCTION

THE PRESENTATION AIM



Address the issue of landslides
and erosion in the specific area
of Urquiza Park

- INTRODUCTION

THE PROPOSAL



Employing solutions using recycled PET fibers



Using recycled discarded plastics in the city to carry out this proposal

EXPECTED IMPACT OF THE PROJECT



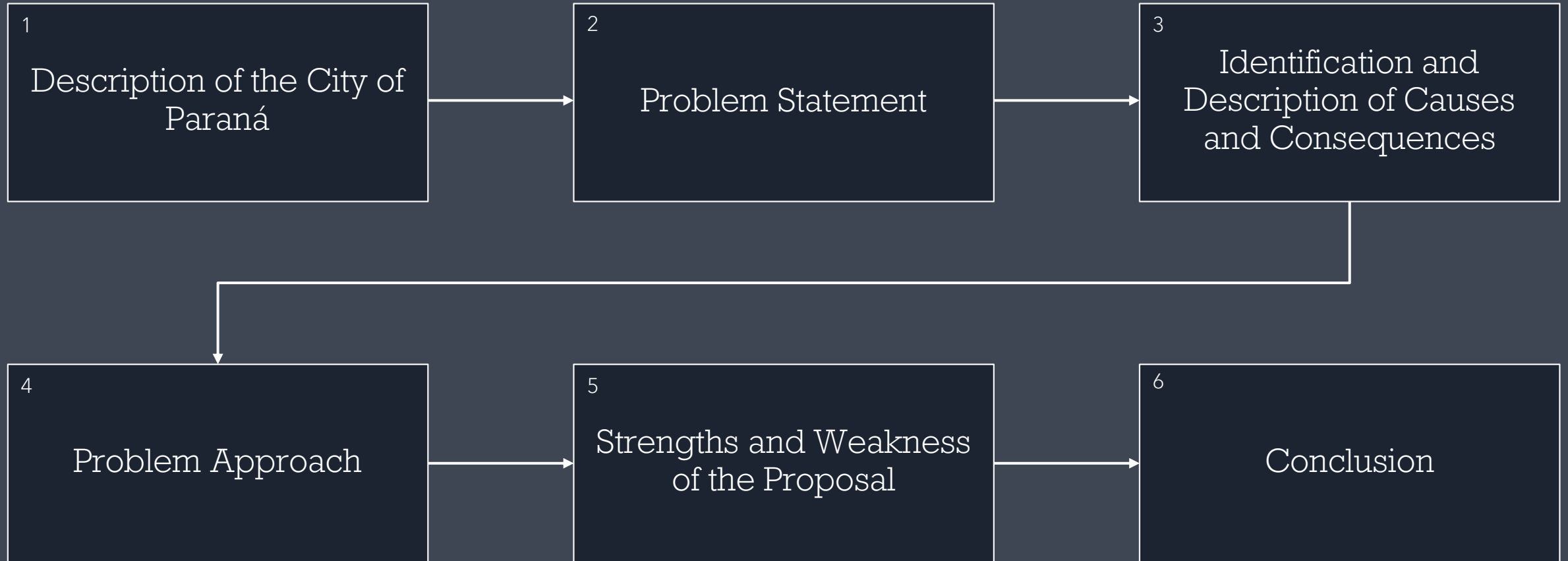
This project seeks to improve the quality of life and safety of people, preserve Urquiza Park and raise awareness about PET recycling in Paraná.



MAP OF THE
PRESENTATION



- MAP OF PRESENTATION

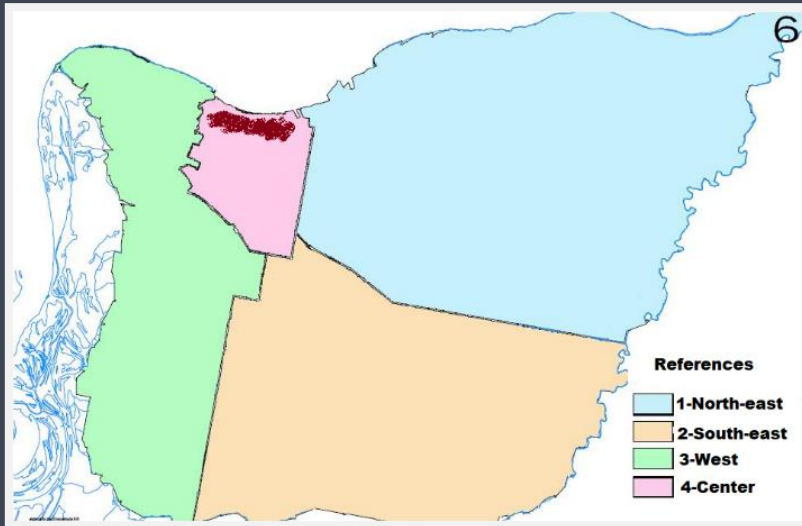


DESCRIPTION OF
THE CONTEXT



- DESCRIPTION OF THE CONTEXT

Paraná and its most important places



This is a general map of the city.

Four districts in Paraná

- DESCRIPTION OF THE CONTEXT

West



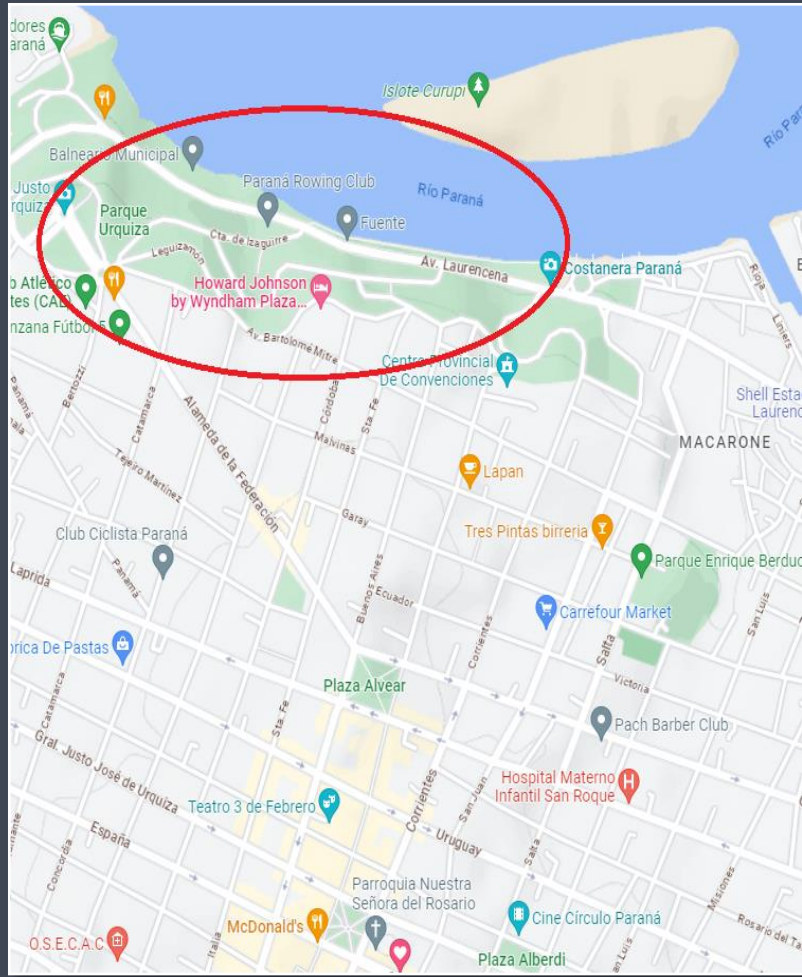
Communal Cemetery



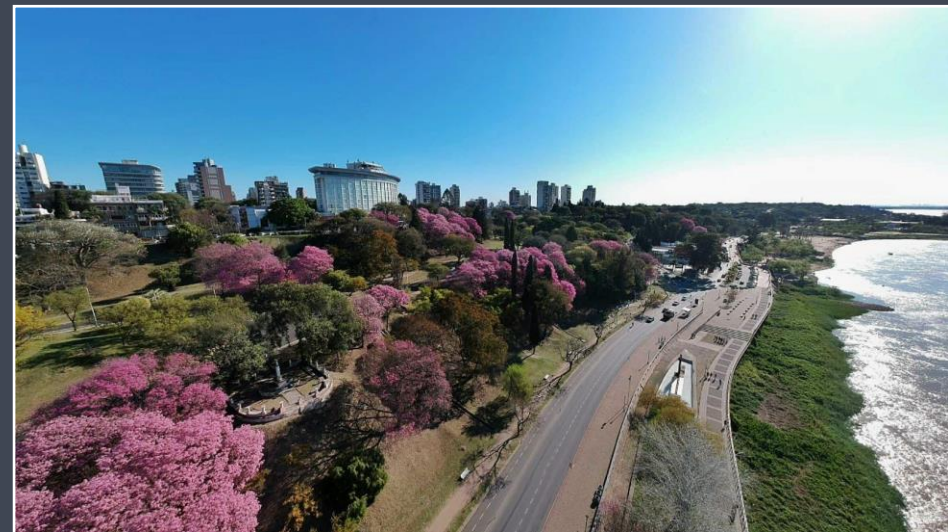
The New Park

- DESCRIPTION OF THE CONTEXT

Center



The Urquiza Park: The area where the issue is located



PROBLEM
STATEMENT



- PROBLEM STATEMENT

- THE PROBLEM -



Landslides in Paraná's main tourist attraction:
Urquiza Park



- PROBLEM STATEMENT

CURRENT SITUATION



A collapsed road, with large sections of broken pavement



A large rock in the middle of Luis Etchevehere Avenue and some trees on the sloped hillside



The fall of a large amount of soil and rocks onto the walk path below caused by the landslide

IDENTIFICATION
AND DESCRIPTION
OF CAUSES AND
CONSEQUENCES



- IDENTIFICATION AND ANALYSIS OF CAUSES

THE CAUSES



- Removal of trees
- Water loss in broken pipes
- Heavy rains
- Water retention in clay soil



- IDENTIFICATION AND DESCRIPTION OF THE CONSEQUENCES

THE CONSEQUENCES



- Devastation of the environment
- Danger to the people that move around there
- Economic losses in the continuous repair of infrastructure



PROBLEM
APPROACH



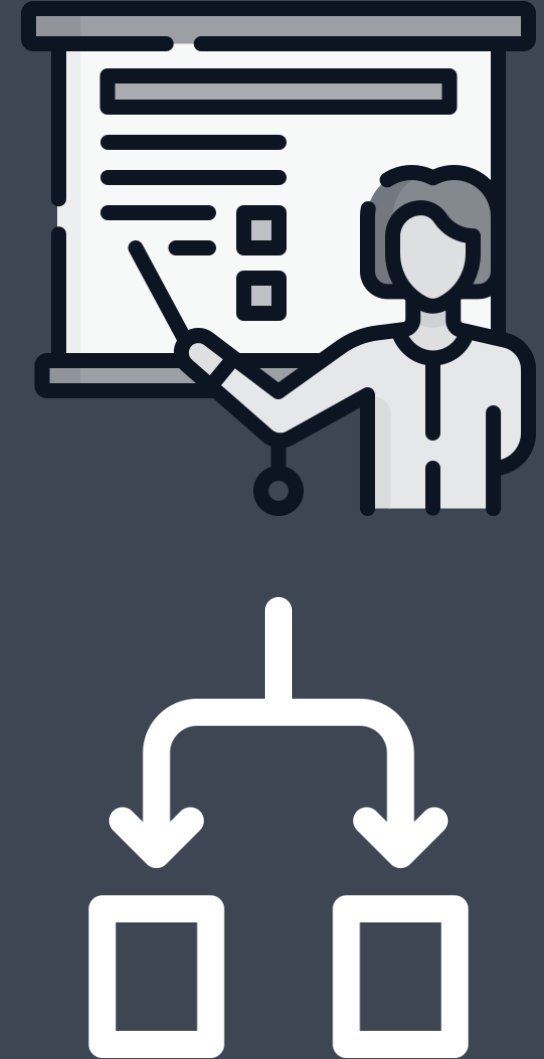
- PROBLEM APPROACH

The objective of this project is to address landslides in Urquiza Park by using recycled PET fibers to reinforce its hillsides.

To do this, it is necessary to split the solution into two stages.

1. Geotextiles production

2. Geotextile installation



- PROBLEM APPROACH

1. Steps in the production of the geotextiles

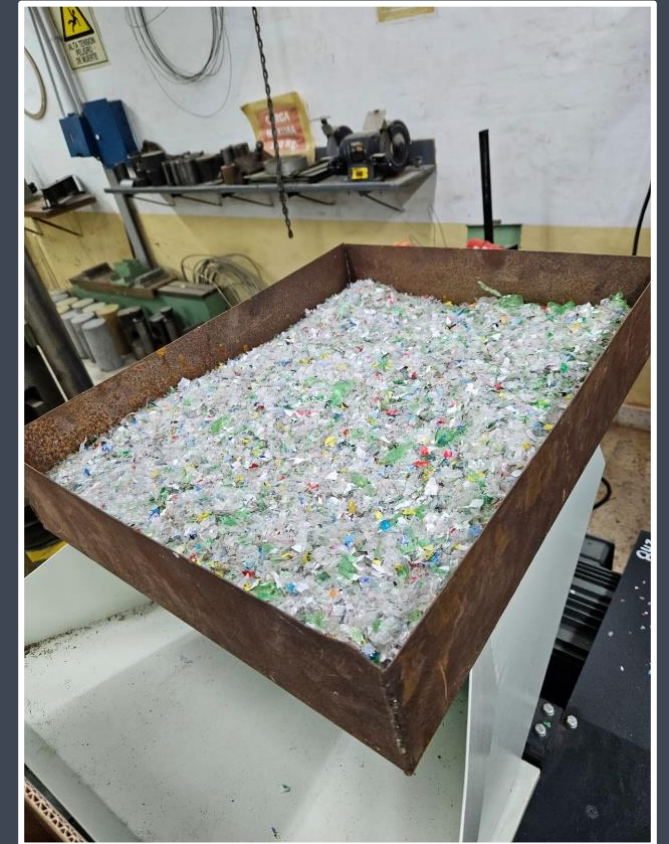
Collect plastic bottles



Take them into an extruder



Produce plastic flakes



- PROBLEM APPROACH

1. Steps in the production of the geotextiles

Processing plant



Final product



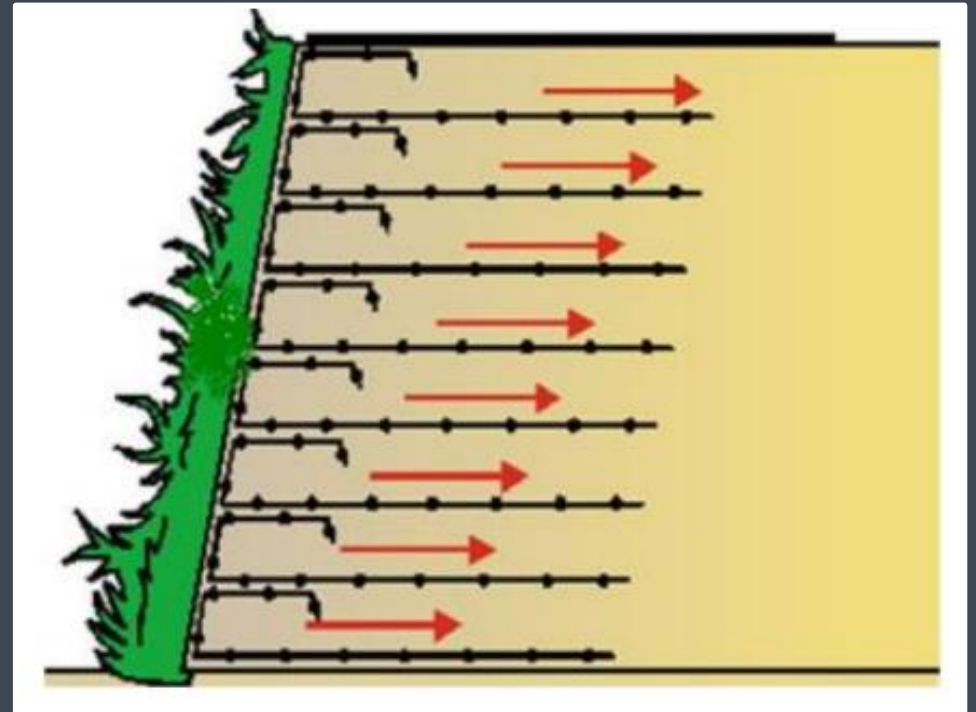
- PROBLEM APPROACH

2. Installation process of the geotextiles

Remove dirt stratum



Place the geotextile in layers



STRENGTHS AND
WEAKNESSES OF
THE PROPOSAL



- STRENGTHS AND WEAKNESSES

STRENGTHS



- Continuous supply of these materials
- Mechanical attributes of PET
- Ease of installation
- Long-term cost reduction

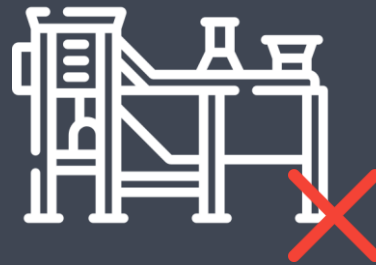


- STRENGTHS AND WEAKNESSES

WEAKNESSES



- Lack of a large-scale recycling facility in the city
- High initial installation cost
- Regular maintenance expenses
- Limited suitability



CONCLUSION



• CONCLUSION



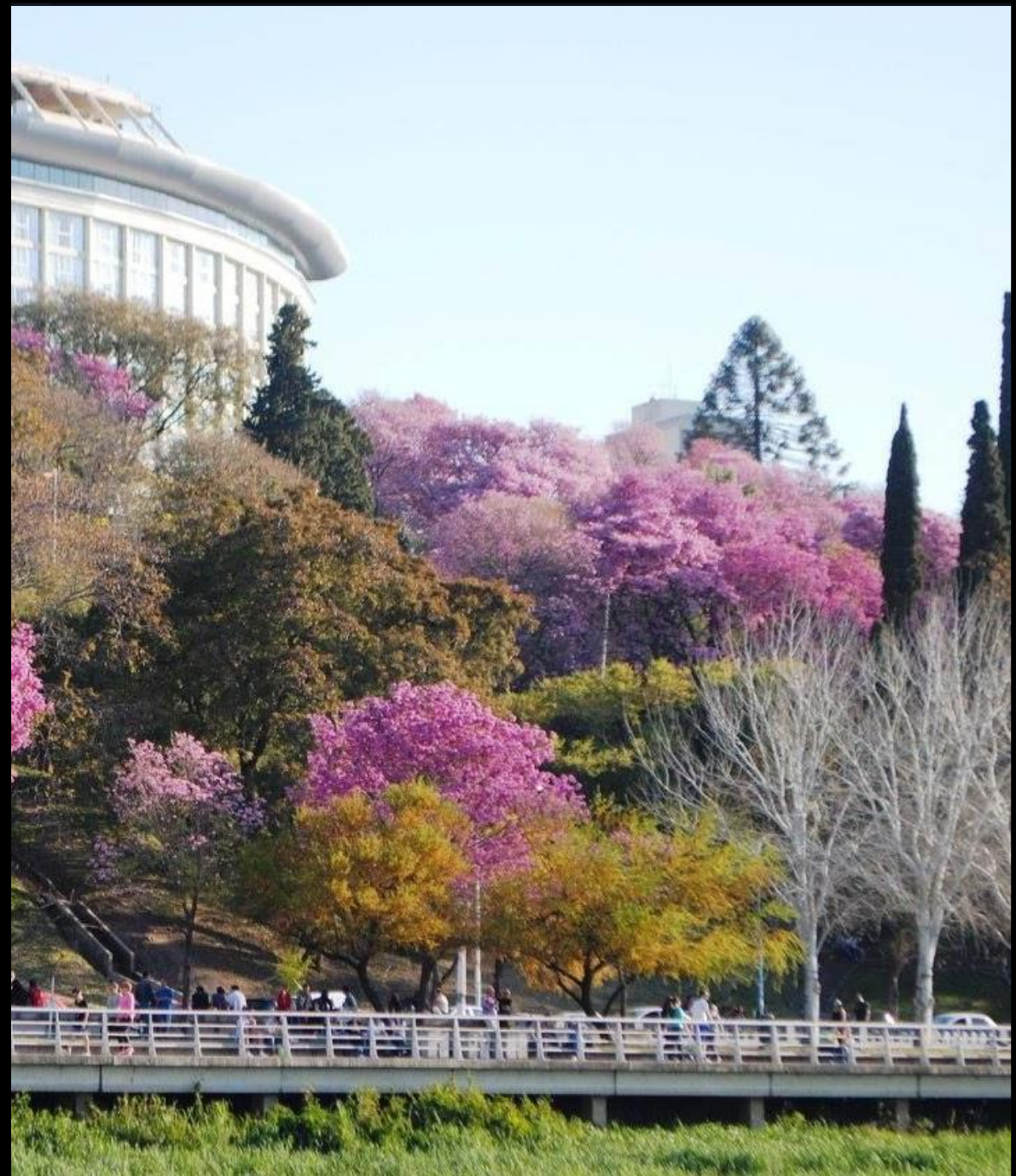
A practical, creative, efficient and sustainable solution to preserve Urquiza Park hillsides



- ✓ Significant social value area
- ✓ Materials with long ecological lifespan
- ✓ Citizen communication
- ✓ Community safety and quality of life improvement
- ✓ Local species and vegetation care



THANK YOU FOR
YOUR ATTENTION!



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