



FIG Working Week 2012

Rome, Italy 6–10 May

Knowing to:

Manage the territory
Protect the environment
Evaluate the cultural heritage



A GIS for hydraulic networks around Verona

Luca Marchi – Verona - Italy



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- extraordinary and continuous rainfall
- floods in the neighborhood torrents

Verona

1th november 2010

16th march 2011



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- the levee broke
- flooding of the surrounding territories

Verona

1th november 2010

16th march 2011



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- Agricultures have been inundated

Verona

1th november 2010

16th march 2011



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- Streets and highways have been inundated

Verona

1th november 2010

16th march 2011



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- Towns have been inundated

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1th november 2010

16th march 2011



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- residents have been evacuated

Verona

1th november 2010

16th march 2011



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The causes of floods:

Extraordinary rainfall

Fragility of de bannks

Especially cause:

No useful strategy in warning hydraulic conditions

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That's why AGIT (Italian Association Surveyors) has decided to propose to the competent authority the making of a GIS to collect, manage and analyze the territorial information in order to create a better management of the hydraulic works in the region of Verona.

AGIT Associazione Geometri Italiani Topografi

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Why a GIS ?

Information A Information B Information C

Information A+B+C

GIS

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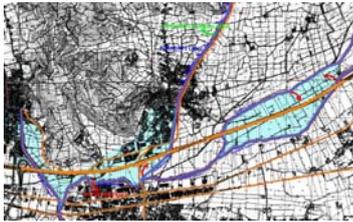
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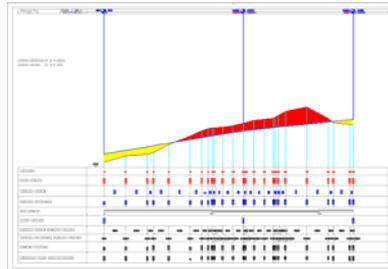


Information:

- Cartographic information



- Technical information



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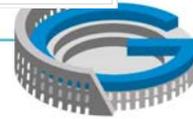


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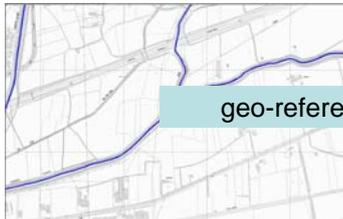
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Cartographic information: base for a GIS

- maps



- Orthophotos



geo-referenced and superimposable

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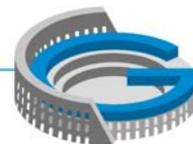




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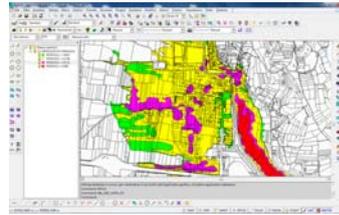


Cartographic information: base for a GIS

- Streams classification



- Surrounding areas classification



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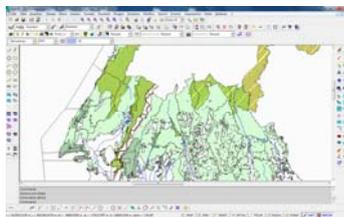
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Cartographic information: base for a GIS

- administrative limits and the management competents of charge entity



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Technical information: specific detail of the hydraulic works and the surrounded areas

- The streams length, the flow



- The bridge and crossing section



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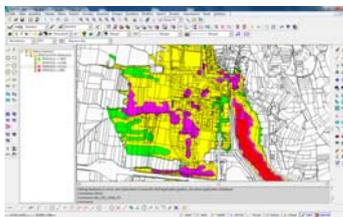
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Technical information: specific detail of the hydraulic works and the surrounded areas

- the dangerous level



- the presence communication lines



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Management and analysis with a GIS

ANALYSIS
 Information A+B+C

MANAGEMENT
 Plan upkeeps

MANAGEMENT
 Plan emergencies

GIS

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Management and analysis with a GIS

Hardware and software

Geo-referenced data

People

procedures

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Updating

Old data



Useless GIS

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Updating

After every upkeep

After new buildings

After every change of the
place conditions

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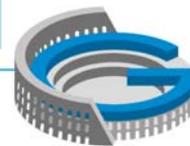




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Updating

coordination among the
competent administrations



Dynamic updating



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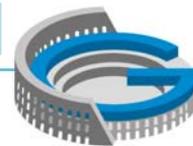
The administrations role

Desire to make a GIS

Financing

Coordination

Maintenance



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The surveyors role

- We know the territory
- We measure and describe the territory
- We are protagonist in GIS making
- We must be prepared an competent

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AGIT (Italian Association Surveyors) does believe in this enterprise and offers the professional formation for every surveyor that wants to grow with the place he lives in.



Thanks for your attention

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