

IPG Paris

**Station GPS permanente**  
DGF Uchile

UNAP Iquique.

Site Name: Colchane (Basic school , Colchane - Chile)	Author : <b>Socquet / Carrizo</b>
Site Code : <b><u>COLC</u></b>	Date installation : <b>2007 11 04</b>
Coordinates : COLC : <b>-68.63861694 -19.27621048 3765.7309</b>	

**DESCRIPTION**

North Chili I region, Permanent GPS station from IPGP / DGF network

**MONUMENTATION**

Antenna located in the top of the scholar library building, basic school of Colchane, Chile. Inox tige (Delmont type) sealed in the top (roof level) of structural building concrete pillar (previously reinforced). PG-A1 with GP Topcon antenna, GB-1000 Topcon receiver.

**HISTORIC**

Permanent GPS station installed since 04 -NOV- 2007

**PRACTICAL INFORMATIONS**

state property	<b>YES</b>	<input type="checkbox"/>	School building – Ilustre Municipalidad de Colchane
private property		<b>NO</b>	
access restricted		<b>NO</b>	City office working hours
telephone nearby		<b>NO</b>	
Electric power nearby		<b>NO</b>	Autonomous energy – (solar panel, regulator and battery)
equipment storage available		<b>NO</b>	
possibility of leaving the equipment without watching	<b>YES</b>	<input type="checkbox"/>	.
person in charge	<b>YES</b>	<input type="checkbox"/>	Prof. Manuel Olcay ( UNAP Iquique)→ 093701220 (cel.), (57) 310716 , (57) 394369, <a href="mailto:molcay@unap.cl">molcay@unap.cl</a>
person to contact	<b>YES</b>	<input type="checkbox"/>	Prof. Alejandro Benegoni (school principal) Ms. Jeannette Galarce (secretary – Municipalidad) (57) 510875 fax (57) 416637 <a href="mailto:imcolchane@yahoo.cl">imcolchane@yahoo.cl</a>

## COORDINATES

COLC\_gps continu: Coordonnees geocentriques :

PXYZ 1 COLC 2195081.5633 -5612319.6603 -2093477.5205

-----  
COLC\_gps continu: Coordonnees geographiques

COLC -68.63861694 -19.27621048 3765.7309

### COLC \_ Site Information Form \_ International GPS Service for Geodynamics

#### 0. Form

Prepared by (full name) : Anne Socquet; Daniel Carrizo

Date Prepared : 20-MAR-2008

Report Type :

#### 1. Site Identification of the GPS Monument

Site Name : Colchane tracking station

Four Character ID : **COLC**

Monument Inscription :

IERS DOMES Number :

CDP Number : (XXXX)

Date Installed : 04-DEC-2003

Geologic Characteristic : GRAVEL/SAND

Bedrock Type : SEDIMENTARY

Bedrock Condition : on the top of a 2 level building

Fracture Spacing :

Notes : installed on the roof of the scholar library, Colchane school,  
Colchane, (Chile).

Local correspondant: Prof. Alejandro Benegoni, Basic School of Colchane.

A steel mark type IPGP/DGF is sealed on the top of the building

No auxilliary point ;

Additional Information : Geological Province: Andean Cordillera - Altiplano

: Local Geology: volcanic basement: Neogene Ignimbrites -  
Andesitic ; local basins: Neogene alluvial and fluvial deposits (gravels and sand).

: Geological information from D. Carrizo

: Program:

#### 2. Site Location Information

City or Town : Colchane

Country : Chile

Tectonic Plate : South American – Altiplano

Approximate Position

X coordinate (m) : 2195081.5633

Y coordinate (m) : -5612319.6603

Z coordinate (m) : -2093477.5205

Latitude (deg) : -68.6386

Longitude (deg) : -19.2762

Elevation (m) : 3765.7309

Additional Information : Latitude, Longitude and Elevation derived from Gamit calculation

3. GPS Receiver Information

3.1 Receiver Type : TOPCON GB-1000  
Serial Number : T224976  
Firmware Version :  
Date Installed : 04-NOV-2007  
Date Removed : (dd-MMM-yyyy hh:mm UT)  
Additional Information : (multiple lines)

3.2 Receiver Type :  
Serial Number :  
Firmware Version : 0  
Date Installed :  
Date Removed : (dd-MMM-yyyy hh:mm UT)

4. GPS Antenna Information

4.1 Antenna Type : TOPCON PG-A1 with GP  
Serial Number :  
Antenna Height (m) : 0.000 (to be verified)  
Antenna Reference Point : ARP = dhpab  
Degree Offset from North : 0.0  
Antenna Radome Type :  
Date Installed : 04-NOV-2007 hh:mm UT  
Date Removed : (dd-MMM-yyyy hh:mm UT)

4.2 Antenna Type :  
Serial Number :  
Antenna Height (m) :  
Antenna Reference Point :  
Degree Offset from North :  
Antenna Radome Type :  
Date Installed : hh:mm UT  
Date Removed :

5. Local Site Ties : no

5.1 Monument Name :  
Site Ref CDP Number :  
Site Ref Domes Number :

Differential Components from GPS Mark to Site Reference (ITRS)

dx (m) :  
dy (m) :  
dz (m) :  
Accuracy (mm) : (mm)  
Date Measured : (dd-MMM-yyyy hh:mm UT)  
Additional Information :

6. Frequency Standard : NO

6.1 Standard Type :  
Frequency :  
Effective Dates :

7. Collocation Information

7.x Instrumentation Type : No  
Status : (PERMANENT/MOBILE)  
Effective Dates : (dd-MMM-yyyy - dd-MMM-yyyy)

8. Meteorological Instrumentation : No

8.1 Humidity Sensor Model :

- 8.2 Pressure Sensor Model :
- 8.3 Temperature Sensor Model :
- 8.4 Water Vapor Radiometer :
- 8.5 Other Instrumentation : (multiple lines) pm

9. On-Site, Point of Contact Agency Information

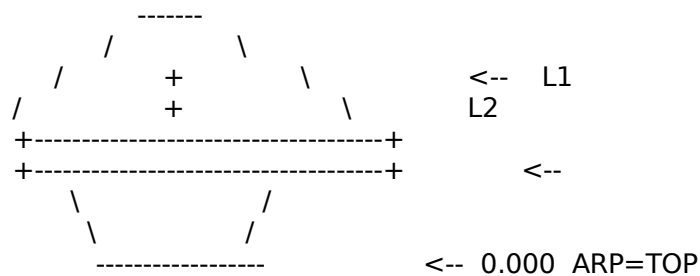
Agency : DGF \_ Departamento de Geofisica \_ Universidad de Chile  
 Mailing Address : Blanco Encalada 2085, Santiago Chile  
 Primary Contact : Jaime Campos Telephone (primary) : 02 678 43 06 Fax :  
 E-mail : jaime@dgf.uchile.cl  
 Secondary Contact : Socquet Anne, De Chaballier Jean-Bernard, Ruegg J.Claude ,  
 IPG Paris France  
 Telephone (primary) : 00 33 1 44 27 48 93 Telephone (secondary) : 303-497-8002  
 Fax : 00 33 1 44 27 38 94 E-mail : Socquet@ipgp.jussieu.fr

10. Responsible Agency (if different from 9.)

11. More Information

URL for More Information :

Hardcopy on File  
 Site Map : Site Diagram : Horizon Mask  
 Monument Description : Site Pictures : Additional Information : (multiple lines)  
 Antenna Graphics with Dimensions



ARP: Antenna Reference Point

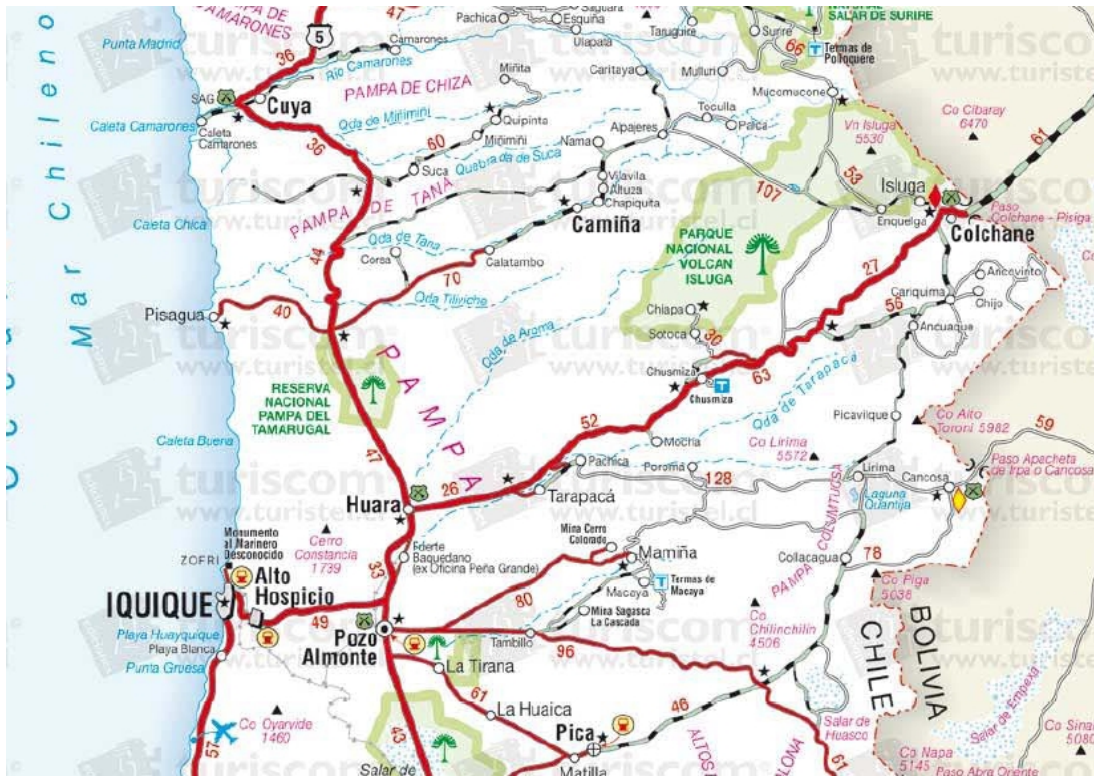
## ADDITIONAL INFORMATION

Solar panel: 100 x 60 cm (14 volts)  
 Solar panel regulator: 15 Amp  
 Battery: 80 Amp - dry  
 Antenna cable: ~15 m  
 Solar panel – battery: ~17 m  
 Internet: no (possible during 2008)

---

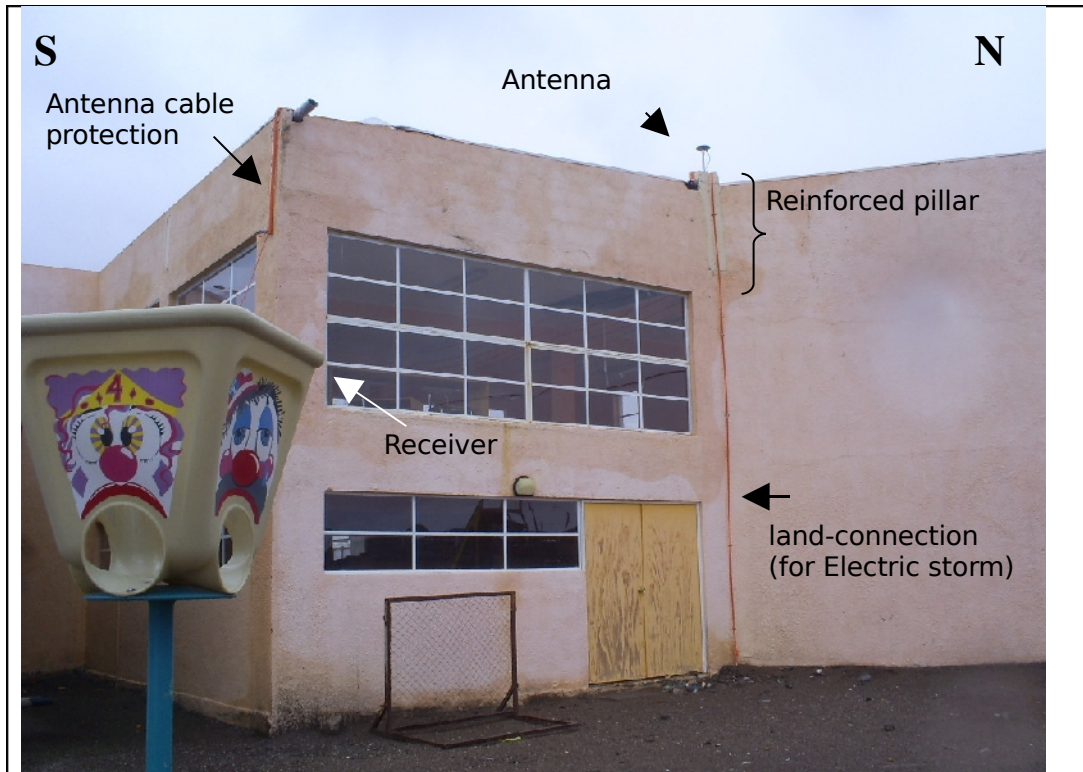
## Locations

<http://www.turistel.cl/v2/secciones/mapas/ruteros/tarapaca.htm>

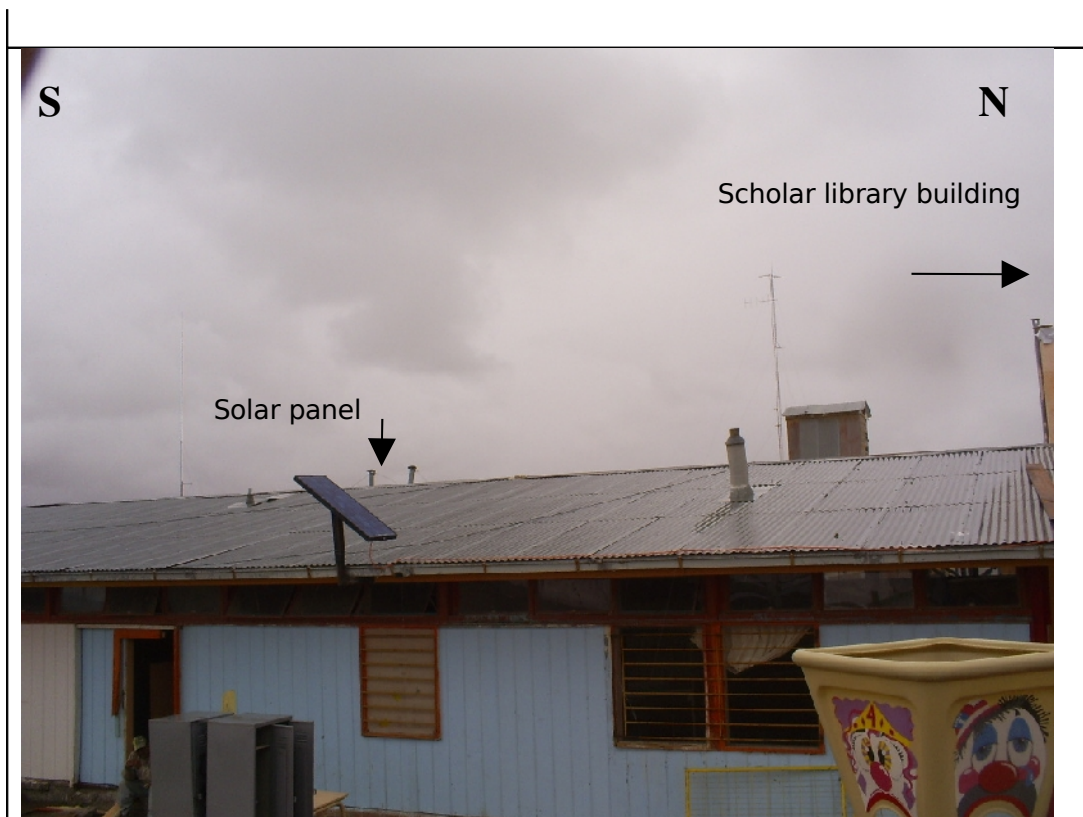


## Google earth

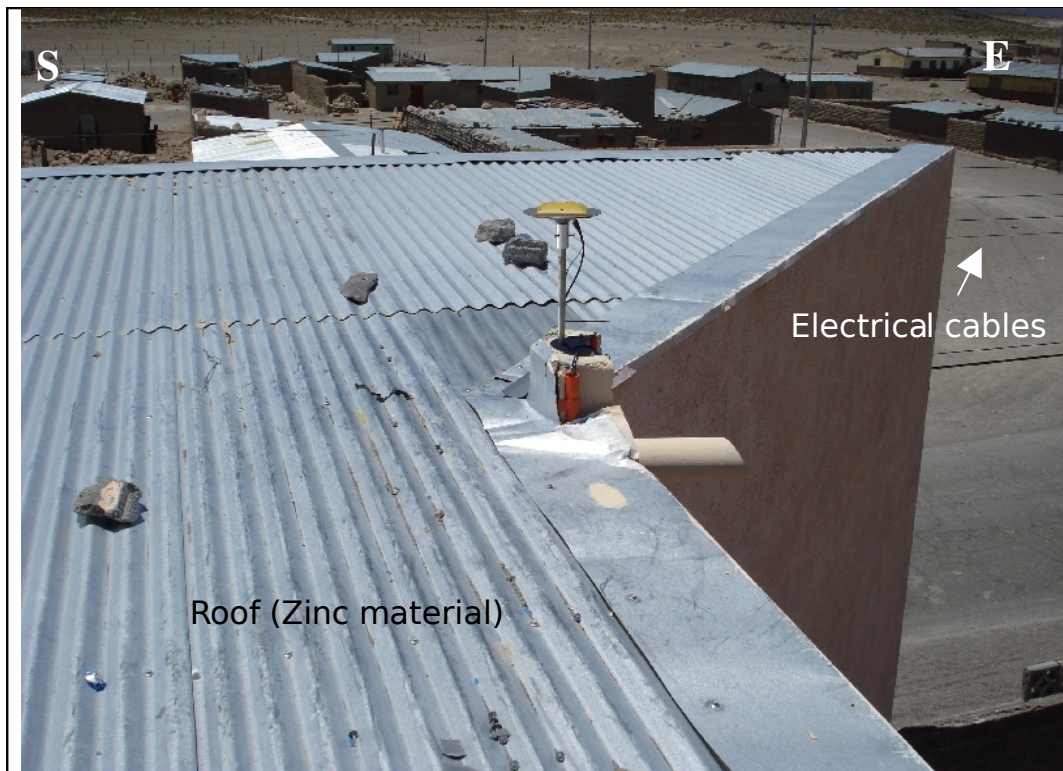




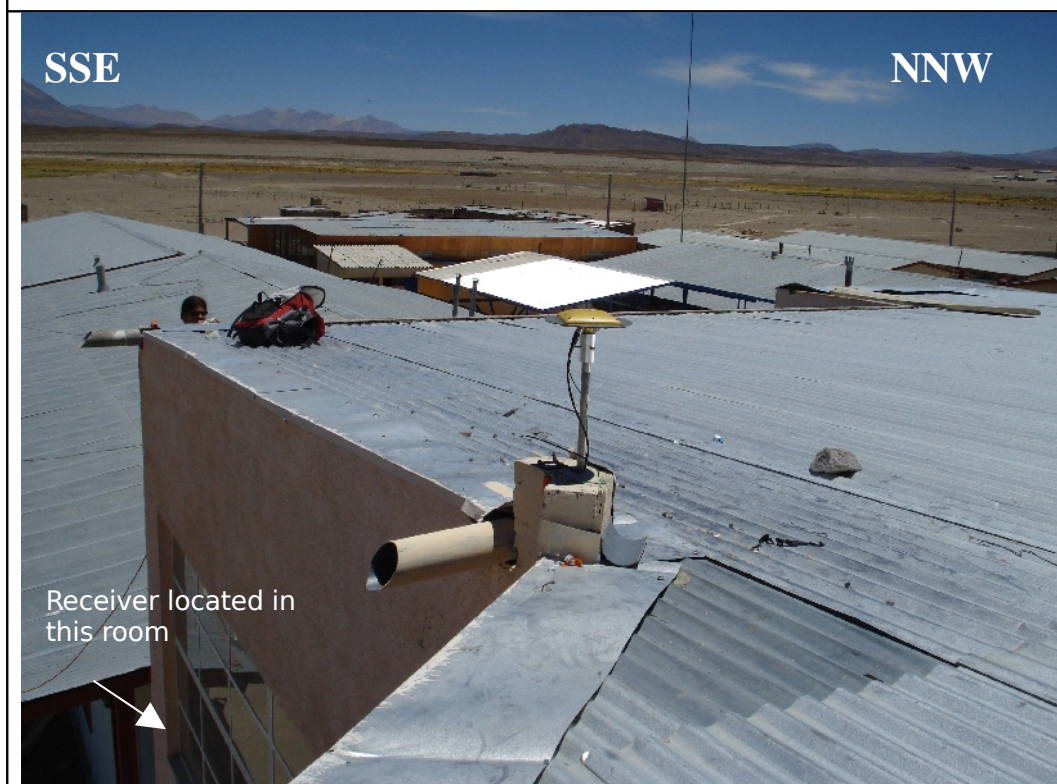
Photography N°1 : View from inside of the school. Antenna located in the scholar library roof. It's possible to observe the reinforced structural pillar of the building and cables installation.



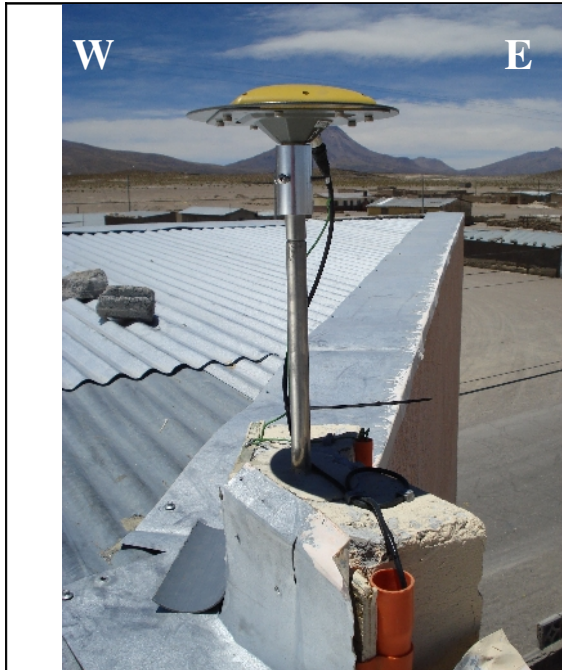
Photography N°2 : Solar Panel location. Roof of the school building, ~17 m of cable between the panel and regulator/battery place.



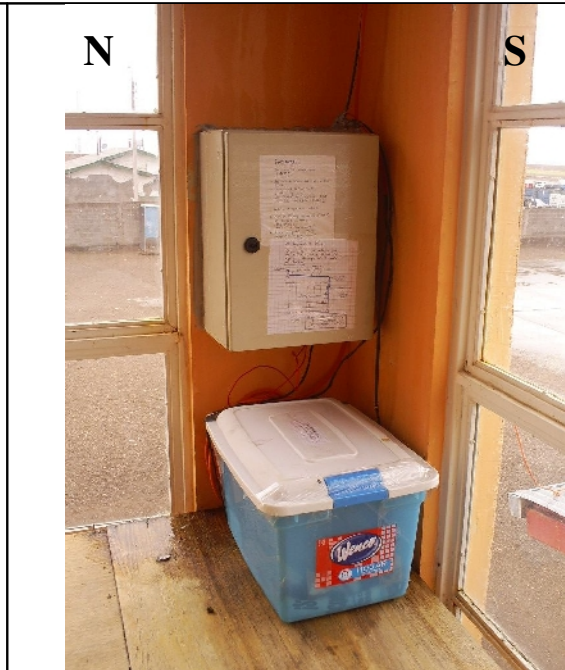
Photography N°3 : Antenna located in the scholar library roof . It's possible to observe the reinforced structural pillar of the building. Electrical cables are located to the north (respect to the antenna) in the same relative roof level.



Photography N°4 : Antenna located in the scholar library roof . Not shield objects were observed to the S - E - W of the antenna position.



Photography N°5 : Antenna details (tige Delmont and adapter IPGP), cable green (mass antenna connector – land) for electrical storms.



Photography N°6 : Details of the receiver and battery placement. Metallic case (receptor GB-1000 + laptop + 4GB USB pen drive) and plastic case (Battery 80 amp + solar panel regulator)



**A**



**B**



**C**

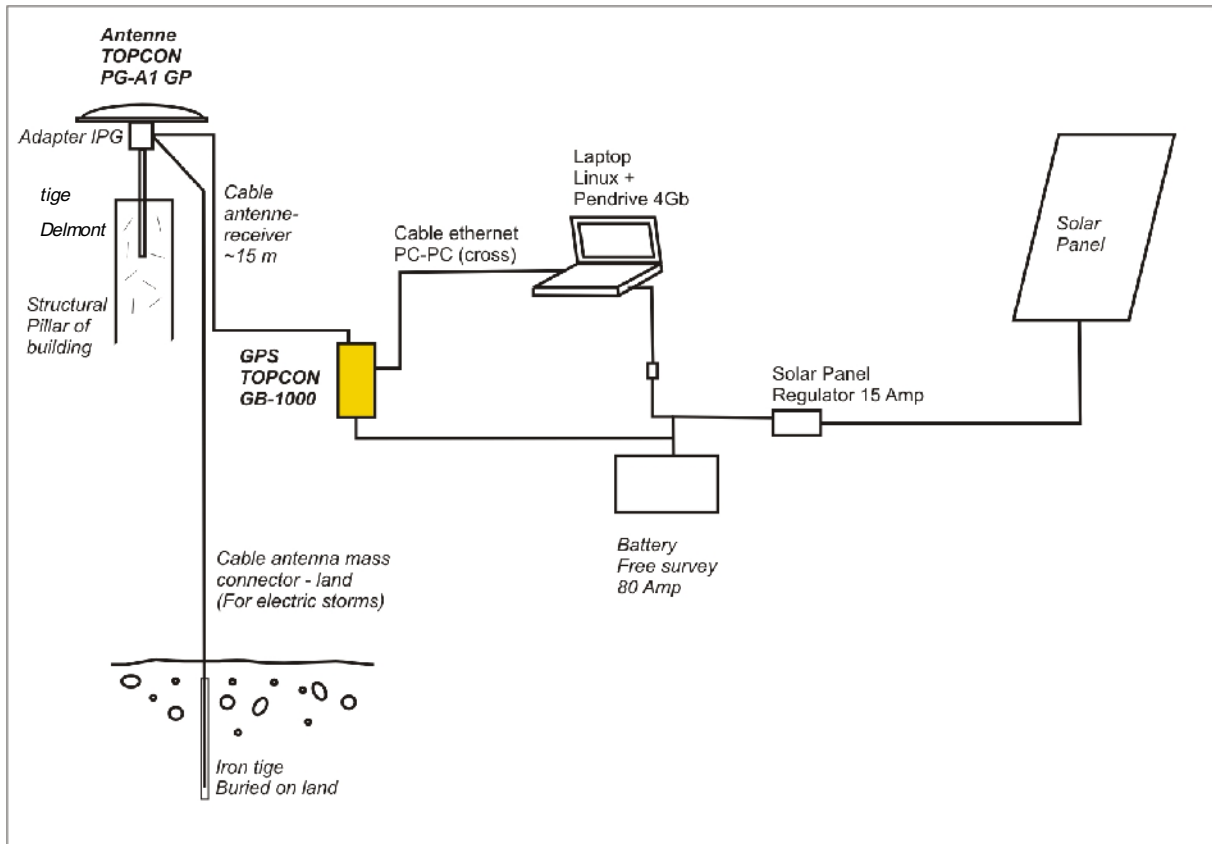


**D**

More view points: **A-B-C**. (During the installation); **D** Detail of scholar Library building (from inside of the school).



## Station sketch



### Procedure de communication & download (receiver - pc\_linux)

1. Make a Intranet between the receiver and the laptop.

- check the internet configuration on the receiver (IP, mask and Getway)
- configure the Ethernet (eth0 or eth1) card in the laptop with the same receiver parameters (just the last number of the laptop-IP must be major than receiver-ip last number) expl.

	RECEIVER	LAPTOP
IP	192.168.49.76	192.168.49.80
Mask	255.255.0.0	255.255.0.0
GW	192.168.0.1	192.168.0.1

\*\*\*\*\*In the case of COLC the station have a laptop connected to receiver \*\*\*\*\*

session: chili5 (check session name with the notes on the laptop cover)

session pass: jbdch

- GPS File data directory:  
mount /dev/hda5  
ls mnt/hda5/DIR\_RAW
- Mount pendrive (place of security data copy and data translate)  
mount /dev/uba1  
ls mnt/uba1/

\*\*\*\*\*

2.1 Establish the communication via FTP (data downloading)

- One time configured the laptop ip, connect the receiver with the laptop LAN port (using an crossover cable).
- Reboot the laptop for update the configuration. Then make de connection using FTP protocol. (for test the connection it's possible to make a "ping <receiver-ip>".  
expl.

```
ftp 192.168.49.72
```

```
e          (port utilized), you can test with a, b, c, d also)
T224976    (password)
```

- One time connected, the receiver show the directory where the data has been accumulated. It's possible to download directly using wget or get command. If was install lftp in the laptop is possible to applied the command "mirror -C".
  - The native TOPCON GB-1000 files are: ?????MMDDs expl. PICC1123a (av. ~2.3 Mb)
  - Do not forget makes extra copy of data.
2. Files Donwloading using automatic command – using the laptop installed in the place
- from the home session (home/chili5/) write the command  
sh gb-raw-tr tdgf (for receiver data downloading and send data to DGF data base\*)  
sh gb-raw-tr tusb (for makes a copy of data in a pendrive)
  - check the files downloaded:  
ls mnt/uba1  
ls mnt/hda5

\*The data transference to DGF\_data-base only could be done if: a) the internet is available, b) the second ethernet card of the laptop must be configured with the DGF – IP, c) DGF firewall must permit the communication.

### 3.Check the receiver configuration.

- One time configured the laptop ip, connect the receiver with the laptop LAN port (using an crossover cable).
- Reboot the laptop for update the configuration. Then make de connection using telnet protocol. (for test the connection it's possible to make a "ping <receiver-ip>".  
expl.  
telnet 192.168.49.72  
e (port utilized), you can test with a, b, c, d also) or 08002\*  
T224972 (password)
- One time connected is possible check and edit the configuration using GRILL language.
- 
- \*Always check the connection parameter in the receiver (IP – FTP – TELNET). See GRILL communication manual in INSU webpage).