

Apollonia&Caesarea&Cnidos&CisamoFlemming

De: Nic Flemming <nflemming@sheetsheath.co.uk>
Envoyé: vendredi 23 août 2013 12:34
À: DE GRAAUW Arthur
Objet: RE: breakwaters

Dear Arthur,

Although they are not collapsed, the block size at Kissamou in Crete, and at Cnidos, can be derived pretty well, also the steep gradient of the side slope.

Apollonia the east breakwater seems to be a wide scatter of rather small blocks, about 0.5m in general, with a few very large ones, several m across, with the largest blocks near the seaward end of the breakwater. That makes sense now, in retrospect. It puzzled me 50 years ago. There is no obvious grading of block size from side to side of the breakwater at Apollonia.

Caesarea in Israel is mostly rubble blocks, although the concrete caissons get all the publicity. They were used to make the vertical dock-wall on the inside of the breakwater.

I will get back to that list of missing sites that you sent me as soon as possible.

Best regards,

Nic.

From: DE GRAAUW Arthur [mailto:Arthur.DEGRAAUW@arteliagroup.com]
Sent: 23 August 2013 10:16
To: Nic Flemming
Subject: RE: breakwaters

Dear Nic,
Indeed, all existing publications I analysed so far led me to an equilibrium position around mid-depth!!
(like Thapsus)
Probably due to the size of stones ranging between a few decimetres and 1 or 2 meters (if this size would be reduced to sand, the structure would be flattened completely)
That is why I am now collecting data on the crest level and stone size of ancient submerged BW (I have nearly nothing, except Thapsus!! I may perhaps soon have something on Klazomenae/Liman Tepe)
Best regards. Arthur

De : Nic Flemming [mailto:nflemming@sheetsheath.co.uk]
Envoyé : vendredi 23 août 2013 11:03

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À : DE GRAAUW Arthur
Objet : RE: breakwaters

Dear Arthur,

It is fascinating that this problem is so complex and inexplicable. In one sense it is possible to see very easily what must have happened; in another, it is very difficult to see why it happened. The last stages of collapse and flattening do not seem necessary. If you conduct model runs on this it will be very interesting indeed. Best regards,
Nic.

From: DE GRAAUW Arthur [mailto:Arthur.DEGRAAUW@arteliagroup.com]
Sent: 23 August 2013 09:50
To: Nic Flemming
Subject: RE: breakwaters

Dear Nic,

OK. Found it. Thank you very much. I'll prepare a document collecting all GE pictures with visible submerged breakwaters and I'll include your picture. I am still working on understanding the failure of rubble mound BW in the long term. It is not well understood by scientists at this time and I'll have to convince Sogreah to conduct a few model tests ... All the best. Arthur

De : Nic Flemming [mailto:nflemming@sheetsheath.co.uk]
Envoyé : jeudi 22 août 2013 19:04
À : DE GRAAUW Arthur
Objet : RE: breakwaters, visit

Dear Arthur,

Yes, the picture was taken on my project mapping Turkish ports in 1969. I have annotated your Google image to show the location of the submerged structure. The red dot shows the tower of the castle where the camera was located to take the picture. The black ellipse shows the probable area where the structure was in the picture in 1969. If you look very carefully in the Google image there is a pale diagonal line in the water within the ellipse. The ellipse should be more in the position 1 o'clock-7o'clock to represent the correct orientation. If you compare my picture with the Google image I estimate that the building of the seaside main road right round the bay has built forwards in to the water by 10-30m or more. The isthmus between the castle and the mainland was narrow strip of sand with a few cafes on it in 1969. Now it is a wide chunk

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of land covered in houses. That implies that it has built into the harbour again by many tens of metres. The floating pontoon for the yachts is then moored on top of it. Since the yachts probably have keels extending at least 2m deep, maybe three, I suspect that most of the structure has been dredged out! Tant pis. There goes another one.
Regards,
Nic.

PS. I am just copying your Red sea list to Lucy Blue.

From: DE GRAAUW Arthur [mailto:Arthur.DEGRAAUW@arteliagroup.com]
Sent: 22 August 2013 13:59
To: Nic Flemming
Subject: RE: breakwaters, visit

Thank you very much Nic.
I guess you made this picture (?)
I must confess I have a hard time positioning this submerged structure on Google Earth: it seems to me it is under the modern breakwaters (attached ppt) ?
Best regards. Arthur

De : Nic Flemming [mailto:nflemming@sheetsheath.co.uk]
Envoyé : jeudi 22 août 2013 12:08
À : DE GRAAUW Arthur
Objet : RE: breakwaters, visit

Dear Arthur,
Here it is. You can see a massive broad rubble platform, and then a narrow rectangular channel, and then a second narrow rubble strip. There is an ashlar square tower base near the seaward end of the broad platform, just behind the mast of the second yacht from the right. The photograph was taken from the top of a tower in Bodrum castle, using a polarising filter to remove sun glitter off the water surface.
I have no idea of the age of this structure. It seems severely out of place in the modern harbour. It does not seem to relate structurally to anything else.
I have checked Google Earth, and there are floating pontoon yacht moorings right over the submerged mole, and it is not visible at all in any of the aerial photos on Google going back to 2005. Maybe it has been dredged out of the harbour as an inconvenience!
Regards,
Nic.

From: DE GRAAUW Arthur [mailto:Arthur.DEGRAAUW@arteliagroup.com]
Sent: 22 August 2013 09:56

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To: Nic Flemming

Subject: RE: breakwaters, visit

Hello Nic,

I hope you are ok. I guess you are busy with the conference.

May I interrupt briefly to ask you for a copy of the picture you showed me of Halicarnassus with the submerged rubble mound breakwaters?

Best regards. Arthur

De : Nic Flemming [mailto:nflemming@sheetsheath.co.uk]

Envoyé : jeudi 15 août 2013 21:56

À : DE GRAAUW Arthur

Objet : RE: breakwaters, visit

Dear Arthur,

I am busy on a lecture for some visiting Libyan officials. So this will take a day or two to respond.

Are they from the list of rubble breakwaters? I'll check soon.

Best regards,

Nic.

From: DE GRAAUW Arthur [mailto:Arthur.DEGRAAUW@arteliagroup.com]

Sent: 15 August 2013 19:21

To: 'nflemming@sheetsheath.co.uk'

Subject: Re: breakwaters, visit

Dear Nic,

I just finished including your info about remains into my table. Thanks again for providing this to me.

I am now left with (only) 3 questions:

1. What did you see in Borcum (your nb 1065)? Is that the Frisian island?
2. Where is "Port Romain" (your nb 1078)?
3. Where St Simon (your nb 1197)?

Voila. I hope you will not be submerged with organisation of the Poland congress.

All the best. Arthur.

A. DE GRAAUW

Port Revel