The Frightening Tremors of January 1693

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Introduction

The opening month of 1693 stands entrenched firmly in the history of early modern Malta. A series of frightening earthquakes shook the Islands forcibly over a span of several days (Ventura and Galea, 1993: 5-6). On Friday 9th at about 10 o'clock at night a first tremor was felt. It was relatively mild and does not seem to have inflicted perceivable damage in these Islands. Barely forty hours later, namely on Sunday 11th during mid-afternoon a second and truly devastating earthquake shook violently the Maltese Islands for a few interminable minutes. No victims were recorded but the population was terror stricken. Worse still, a long list of buildings including most landmark edifices suffered notable or severe damages. Many private properties in the harbour area necessitated *qualche ristoro*, while most churches suffered more extensively. Likewise, several constructions at Mdina and Rabat including the Cathedral sustained significant structural damages (Ellul, 1993: 24-43).

Damage Assessment

All in all, Gozo seems to have fared slightly better, even if Agius De Soldanis makes reference to an unspecified number of churches besides the Matrice and St George's Parish as being affected.[1] He states also that a tract of sheer cut cliffs at Ta' Ċenċ plunged into the sea, whereas the shoreline at Xlendi Bay receded out for a considerable distance and advanced back swiftly with deafening sound. Other frightening aquatic phenomena were registered along the eastern coast of Sicily, where several crafts were engulfed by the agitated waters (Ventura and Galea, 1993). A host of several more minor and innocuous tremors shook the central Mediterranean throughout the following week.

As a means of quantifying the damages sustained and in view of drawing up a plan of action to prevent further spoil and potential casualties from the collapse of destabilized buildings, the Order commissioned a number of technical reports from leading connoisseurs. On Friday 16th a commission was setup to assess and report back on the state of affairs in the fortified towns hugging the Grand Harbour and to enact all necessary precautionary actions. This commission undertook the assigned task with great fervour and succeeded in submitting a detailed survey within six days (Ellul, 1993). Some weeks later a comprehensive reconnaissance of Mdina was carried out also (Ellul, 1993). On the contrary, Gozo had to wait five long months before receiving due attention. As at Mdina, the assignment was delegated to Mederico Blondel,[2] the then resident chief engineer of the Order of St John, who submitted a revealing report on 20th June bearing the title *Relatione della Visita del Gozo ad accasione de Terremoti,* (NLM, AOM 1016, Fols. 195-200).

Blondel dedicated the first part of his report to the Castello and underlying Rabat. He started by highlighting the overwhelming run-down state of the Castello's urban cluster due to successive decades of abandonment rather than as a direct result of said earthquakes. Blondel then focused on the damage sustained by the Matrice and by St George's Parish. The former, commonly believed to have been founded by Count Roger in 1091, boasted of an extremely interesting construction, albeit still grossly overlooked by modern scholars. Blondel recounts how its lofty bell-tower was dislodged by the January tremors and needed dismantling and reinstatement. With regards St George's Parish, which had just been reconstructed in the form of a Latin-crossed monumental

[1] Gian Pietro Francesco Agius De Soldanis, *Il Gozo Antico e Moderno, Sacro e Profano* (N[ational] L[ibrary] [of] M[alta], Library Manuscript 145, Maltese translation by Mgr. Joseph Farrugia, English Translation by Fr. Tony Mercieca) Vol I, Sec 6.2.

[2] Mederico Blondel (1628 – 98), who hailed from a French family of architects, succeeded Francesco Buonamici (1596 – 1677) as resident engineer of the Order in 1659, but seems to have worked in Malta at an earlier stage. He was made Knight of Grace of the French Langue and remained in the Order's service until his death in 1698.

building in the baroque idiom (Pisani, 2011: 11-33), he advised for the replacement of the then towering dome with a rather squat superstructure. The ramparts of the Castello, which were dealt with next, required a major refit to make good for the then long overdue maintenance works. He went on to emphasize the need for a well thought out programme to weed systematically all salt-tree shrubs flourishing all over the ramparts,[3] which in his learned opinion constituted the main threat to the Castello's fabric. Blondel inspected also four of the then six coast watch towers. No significant damages attributable to same tremors are singled out, but each of the said towers required varying degrees of repairs and/or general maintenance works. Many of the listed works were eventually taken in hand in 1696 as part of a major refit of the Island's defences (NLM, AOM 1016, Fols. 417-419).

An English translation of the full report is being published hereafter for ease of reference:

Eminent Master
I visited Gozo during the past few days as instructed by Your Eminence to assess the structural condition of the Castello of that island, namely the civilian buildings and the ramparts, in view of the alleged damages caused by the recent earthquakes. It must be stated from the onset that, generally speaking, the claimed disastrous effects were nowhere to be seen. Apparently, these unfounded claims were not based on first hand and well-informed judgments but stemmed from excessive preventive reactions as confirmed by this report based on personal and exhaustive on-site reconnaissance. Starting off with the Castello, which I have had the opportunity to visit and examine thoroughly and accurately on several occasions, it is to be noted that the dwellings are either in ruins or in a poor state of repair. Less than a third of the respective habitations are still standing. Of these, the greater part is in imminent danger of collapse. Unless prevented from crumbling, these same unstable constructions will, in due course, trigger inevitably a deterrent effect on the adjacent and adjoining properties that survive in a slightly better state of conservation.

This pitiful state of affairs is the result of many years of abandonment and decay rather than a direct effect of said earthquakes. The latter exerted simply the last push to tumble the same derelict constructions that stood already on the verge of collapse.

An effective remedy which deserves due consideration is, in my opinion, the obligation of the respective owners to rebuilt said properties within a stipulated period of time as established by Your Eminence. Those owners who are unwilling or unable to fork out the required reconstruction expense should be directed to sell their plots to interested third parties following an architect's estimate based on going rates. In so doing, all available building plots should be taken up, thereby reinstating the original complement of dwelling units. In the eventuality that this plan does not succeed to the full, any remaining derelict dwellings are to be acquired by the Order and developed into stores or turned into a parade ground, both of which are badly needed at the Castello.

One cannot but emphasize the earthquake's detrimental effect on the only belfry of the Collegiate Church of the Castello, which is several centuries old and is believed to have been founded by Count Roger. Its fabric is characterized by good quality and large building blocks of foreign extraction that are so craftily dressed that the joints are hardly visible. Notwithstanding, it did not succeed in resisting the earthquake's terrible shakes. Ironically, the finer buildings seem to have suffered most. The upper section of the bell tower, which abuts onto the choir and rises above the roof of the nave, has to be dismantled and reinstated.

The recently reconstructed church of St George, the parish of Rabat, suffered significant damages

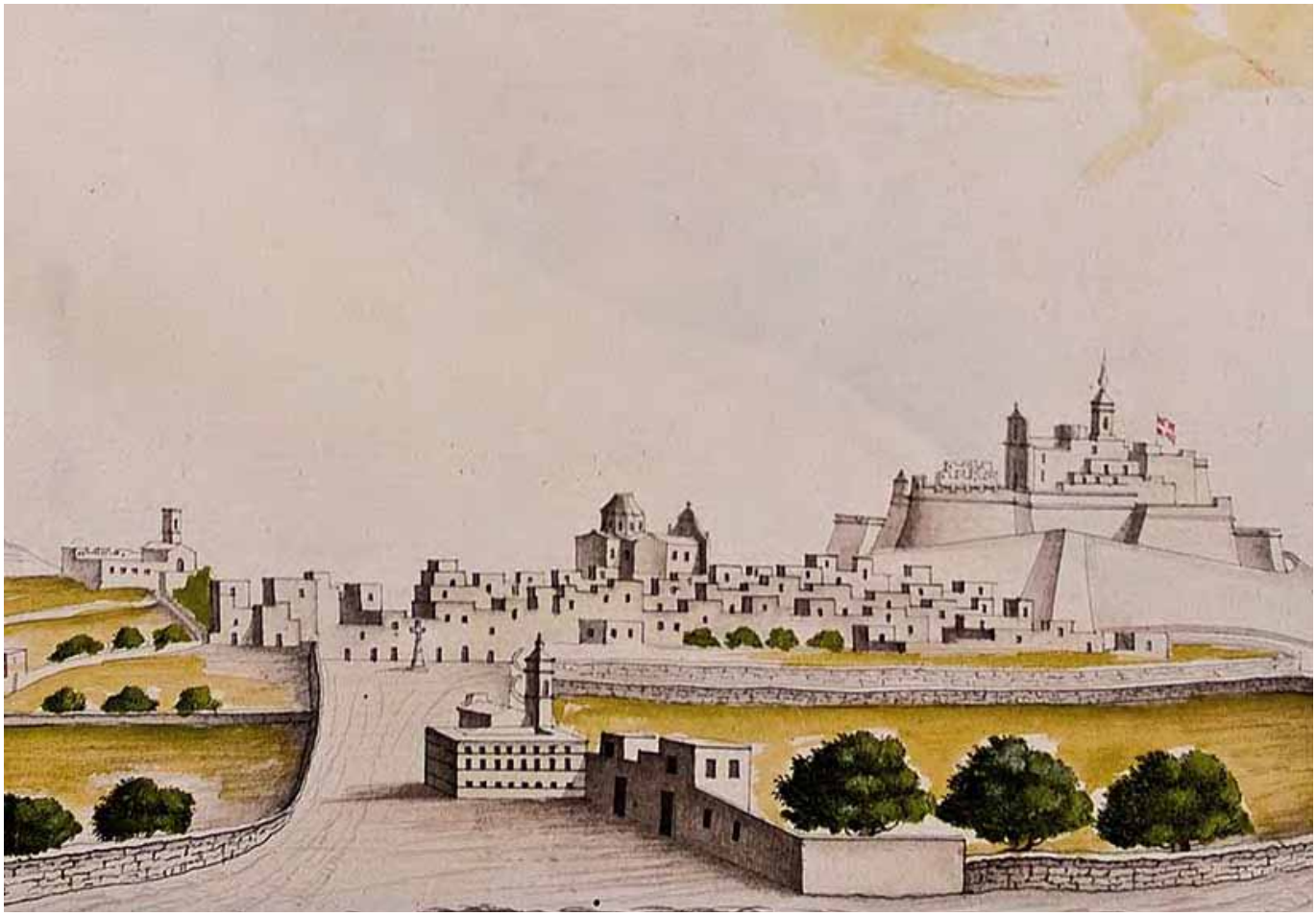
[3] The Maltese Salt Tree (species name *Darniella Melitensis*, Maltese name *Xebb*) is endemic to the Maltese Islands and protected by national legislation. Moreover, the site of the Gran Castello is listed by the Malta Environment and Planning Authority as a Special Area of Conservation.

1620's view of the Castello (extract Ta' Savina Church Altarpiece). The bell tower of the Matrice stands at the centre.

also. The four pendentives or triangular panes underneath the cornice which supports the drum have been destabilized consistently to the extent that the stonework of the said drum developed notable fractures throughout its eight facades. To this effect, it is considered necessary to dismantle the dome, the drum and the greater part of the underlying cornice and triangular panes. The ensuing reconstruction needs to be undertaken with greater diligence. Larger and cubic[4] ashlar blocks are to be employed. Besides reinforcing the cornice, the height of the surmounting drum is to be halved, while the present complement of one window for each of the eight facades is to be reduced to four. These are to follow an oval or bull's eye design and are to be placed symmetrically above the large arches of the crossing. The interior elevation of the remaining four facades of the same drum, namely the ones on top of the triangular panes, are to be taken up by corresponding oval recesses. More importantly, four prism-shaped and round-headed buttresses that reach up to the crowning cornice of the drum are to be placed on the roof, one at the back of each mock window. In view of being solid enough to sustain effectively the weight of the surmounting dome and lantern the new drum must not exceed an overall height of seven or eight courses. The pillars and arches of the crossing do not manifest any structural defect or damage.

I will now discuss the Castello and the watch towers defending the Gozitan coast, which according to the same unfounded reports are believed to have sustained major damages.

[4] The traditional and widespread technique of wedge-like blocks anchored firmly into a backfill of processed terrasoil and stone chippings seems to have been resorted to in the original 1670's construction.



1720's view of Rabato (NLM, Treas. B 290) with St George's Church dominating the town's skyline. Apparently Blondel's advice to lower the dome had not been implemented by then.

Starting off with the Castello, it must be stressed that the finger-thick fissure running vertically from top to bottom along the main bastion wall is relatively old. Suffice to note, that I've seen it each time I crossed over to Gozo during the past 34 years. Its formation was triggered by the underlying geological deposits, whereby the inner part of the bastion rests on the perched ledge of (Upper Coralline) bedrock as evidenced by the exposed elevation on the side, while the remaining footprint seems to be lying on a sturdy base placed below the floor of the ditch, but which may not be deep enough to reach the level of the underlying live rock. This notable difference in bedrock levels is undoubtedly the main reason for the formation of such fissure. More importantly it does not pose a threat to the overall stability of the bastion. It must have evolved some time after the renovation of the Castello during the tenure of the most Eminent D'Homedes[5] *and eventually remained unaltered for many years. Contrary to the persistent claims, the earthquakes in question did not have any tangible bearing.*

The counterscarp of the ditch that buffers the two bastioned land fronts, namely the one on the side of the main gate and that overlooking Rabat, is eroded and in a state of disrepair. Having been consumed by the passage of time, several sections crumbled down independently of the recent earthquakes. As a matter of fact, I have brought this issue to the attention of Your Eminence and of the Venerable Congregation of Fortifications on several occasions during the past years. Besides, last year the Jurors of that island submitted a plea in connection with the present poor state of affairs to Your Eminence. Your Magisterial Decree of 11th October 1692 directed the Venerable Congregation

[5] The bastioned land front along the south and southeast flanks was crafted mostly during the tenure of Grand Master Alof de Wignacourt (1601-22). No identifiable remnants of the enhancement works undertaken during the tenure of Grand Master Juan D'Homedes (1536-53) seem to have survived by then.

of Fortifications to entertain this request, but the necessary repairs were never taken in hand. Inevitably, the situation is destined to decay further, and unless mitigated in the immediate future the resultant costs of reinstatement will increase exponentially.

That is all I had to report vis-à-vis the exterior side of the ramparts. As regards the inner side it must be noted that:

The west and south facing facades of the Cavalier that lie next to the Clock Tower and to the grain stores of the University respectively need minor repair and maintenance works. Such works should be carried out with a modest budget, which, provided that my memory serves me well, are to be borne by the same University. Some three years ago the terrace of the gunpowder magazine caved in under the weight of falling debris from overlooking

1850's view of part of the Castello's land front (extract Kerċem Parish Altarpiece). St Martin's Cavallier, part of which collapsed in 1861, occupies the left extremity.

old structures during a heavy storm. Worst still the same terrace and adjoining gunpowder magazine became flooded. As the door is kept constantly shut and since said magazine lacks adequate windows or ventilation openings as in analogous stores to ensure maximum protection from fire, its internal ambience remained excessively humid. Consequently, the insulating wooden flooring and wall boarding, and the same barrel containers became infested with mould growth. Needless to state the gunpowder got rotten in the process.

The only effective, albeit not straight forward remedy to this inconvenience that crops to my mind is the exposure of the powder barrels to the sun during the hottest hours of the day and under the constant watch of the Castello's Bombardiers. In addition, the doors of the gunpowder magazine are to be kept wide open to aide ventilation. This procedure is to be repeated daily for an entire week or as deemed necessary by the Governor and the Capomastro.

In view of enhancing further the drying up of the same store, it would be opportune to uproot thoroughly any vegetation growing on the floor of the adjoining terrace and to level it anew with torba[6] as to drain off efficiently the rain water into the ditch.

The armoury of the Castello[7] was not damaged by the recent earthquakes as alleged, and the relocation of all arms to underlying Rabat was not necessary. One may take this opportunity, however, to redo the pointing of the internal and external sections of the wall above its two windows and along the side wall respectively. Same arms can eventually be transferred back and reorganized as before.

It is pertinent also to highlight the presence of a particular type of shrub, commonly called sauda or kali and employed for the manufacture of a very strong ash,[8] which grows all over the walls of the

[6] Torba consists of a well-packed floor of stone chippings and grounded lime.
[7] This was one of at least two armoury deposits. Contemporary sources inform us that the main armoury was housed within the Governor's residence overlooking the then petit square of the Matrice. The store in caption stood at foot of St John's Cavalier and was eventually modified and extended during the course of the nineteenth century to accommodate a detention facility.
[8] Charcoal ash (obtained by removing water and other volatile ingredients from vegetation substances through slow heating in the absence of oxygen), constituted a basic ingredient for the production of gunpowder. The other prime ingredients are sulphur and potassium nitrate.

A salt tree shrub atop the parapet wall of St John's Cavallier. Note the dislodged masonry.

Castello and of the Ravelin situated outside its main gate. Its big roots reach deep into the walls' thickness, dislodge the masonry and jeopardize the overall solidity of the ramparts. Even though I had raised this issue on past occasions and stressed the urgent need of their uprooting, same shrubs were allowed to grow into small trees, thereby implying that my directions were ignored altogether repeatedly. To this effect, I am hereby invoking the mediation of Your Eminence to instruct explicitly the Sergeant of Gozo[9] through the Governor to enact such mitigation measures, since the damage being inflicted is much more serious than commonly believed.

This is all I deemed opportune to highlight with regards to the Castello, but having visited the principal coast-watch towers that guard the shoreline of Gozo as requested insistently by the respective Castilians,[10] it must be reported that:

The main front of the gun platform at the Tower of Xlendi,[11] which stands along the southwest coast of Gozo, is appreciably eroded by sea spray and needs to be plastered over by a mixture of lime and sand. The same applies to several sections of the tower building proper, in particular the west facing corner. Said job can be completed with a modest budget, while it is hereby certified that the earthquake did not inflict any noticeable damages.

Having been subjected to significant repairs some two years ago, Marsalforn Tower[12] lacks the equipment to raise the bridge, namely a chain, pulleys, drum and a rope. Besides, the palisade is to be crowned with spikes 1½ palms in length in view of its squat proportions, while the frequency of said spikes at either end is to be doubled.

All in all, the alleged disastrous effects of said earthquake as perpetrated by the tower's Castilian

[9] The sergeant of Gozo headed a troop of nine professional soldiers, all salaried by the Order and based at the Castello.
[10] Each of the respective six towers was manned by a Castellian. Those of Garzes and Marsalforn were salaried by the Order, while ones of Xlendi, Dwejra, Mġarr ix-Xini and Daħlet Qorrot were paid by the University or regional government.
[11] Xlendi Tower was erected by the University in 1650. Its construction features an abutting gun platform on the sea-facing side.
[12] The then Marsalforn Tower, standing on the tip of Għajn Damma Plateau, was erected in 1616.

are exaggerated. This preoccupation seems to have been accentuated by the presumed friable nature of the underlying bedrock. As a matter of fact, a number of persons in the company of the assistant bombardiers of the same Castilian scaled down the perilous fissures and caverns at the foot of tower and which were erroneously believed to extend well beneath the tower's base, thereby feared to threaten its stability. While confirming that the hair-like fissures that zigzag the east facing facade of the tower, in particular at the level of the base of the vault at first floor, must have been triggered by the tremors in question, it must be stressed that the tower is structurally sound. In my opinion it will remain structurally safe and fit to withstand enemy shots or analogous earthquakes for well over a century.[13] *Likewise, the distance between the base of the tower and the cliff's edge measures fourteen palms in the narrowest part.*

The sea-facing side of Mġarr ix-Xini Tower, in particular its lower section, is eroded due to its exposure to direct sea-spray, thus calling for the application of a plaster layer of lime and sand reinforced with stone chippings. Proposed low-cost intervention will none the less prove to be very effective from preventing future damages.

Finally, even though the large Tower of Garzes survived said tremors intact, its fabric requires a few repairs that are not deemed to be particularly expensive, namely:

1) The reinstatement of the approach flight of steps, in particular its upper section;

2) The erection of a gate armed with pointed spikes;

3) The replacement the underlying right hand beam of the draw bridge;

4) The reinstatement, redesign and stiffening of the open lookout post which crowns the north-facing corner of the tower, whereby the broken corbels are to be replaced, the trajectory of the overlying parapet wall is to be receded by 2½ palms, while the resulting enclosure is to become supported by three corbels on each side. The other vedette on the opposite side, that is the south-facing corner, is still sound. No other vedettes are required to control effectively the approach to each of the four sides of said tower;

5) The installation of missing apertures and the replacement of the rotten ones, and the introduction of screens in the respective window openings to offer better protection against inclement weather;

6) The repositioning and reconstruction of the altar within the chapel over a terraplien base to avoid a repeat of the present break-up which has been brought about by the varying quality of the underlying

Early nineteenth century view of Garzes Tower by Salvatore Busuttil (1798-1854). Note the plinth supporting the tower structure.

[13] The same Marsalforn Tower collapsed in 1716 when the underlying cliff gave way. It was replaced by a second work in 1720. This second stronghold, which stood on the crest of the same promontory, was eventually demolished in 1915 to make way for a Wireless Communication Station.

foundations, namely a combination of solid walls and packed infill;

7) The pavement of the entrance hall with flagstones;

8) The repair and pointing of the uppermost stone course of the plinth along the facade overlooking Mġarr Harbour.

Each of the listed eight jobs, which fall under the responsibility of the Order, should be executed with a modest budget.

This is all I had to report with regards to my last visit to Gozo. As noted repeatedly most of the highlighted damages have been spearheaded by the unstoppable passage of time rather than by the tremors in caption. Anyway, I thought it opportune to submit this written statement to Your Eminence, which I respect deeply, as a follow up to my verbal communications on the matter.

Valetta, 20th June 1693
Humble servant and brother of Your Eminence
The Knight Fra Mederico Blondel

An Annual Votive Procession in Thanksgiving

The remarkable absence of casualties, as opposed to the terrifying estimate of over 100,000 deaths in southeast Sicily, was interpreted unanimously as a divine act of the Almighty through the merciful intercession of several celestial vassals, in particular the saintly protectors of Malta and Gozo respectively. Unavoidably, this common belief prompted the staging of a host of pious manifestations. For instance, the Order lost no time to encourage the population to partake in prayer sessions and acts of penance following the violent tremors of Sunday 11th, whereas a thanksgiving *Te Deum* recital was held in most churches on many anniversaries to follow (Castagna, 1869: 297).

On their part the ecclesiastic and civil authorities of the sister island institutionalised a votive procession with the effigy of St Ursula[14] from the Matrice to the devout chapel of Our Lady of Graces.[15] Held on the second Sunday of January, this procession saw the involvement of the Chapter and Clergy of the Matrice, Cathedral since 1864, the Clergy of St George's Parish, the Friars of the Rabat Priories, and the lay community under the distinguished leadership of the highest local authorities, including the Governor during the Knights' tenure and the Bishop after 1864. Stefano Erardi (1630 – 1716), one of Malta's most prolific artists of the late seventeenth century, was commissioned an altarpiece representing Our Lady of Graces and part of said votive procession on its arrival at the then wayside chapel. This painting was subsequently enlarged and adapted as main altarpiece for the present church of the Capuchin Friars erected during the 1740's. The same Friary treasures a second flatwork depicting the same

Our Lady of Graces altar painting by Stefano Erardi (Photo by Guzeppi Cremona 1890 – 1950, © John Cremona)

[14] The effigy of St Ursula is said to have originated as a figurehead and was donated to the Matrice in 1614 by the then Governor Eugenio Ramirez Maldonato.
[15] The Chapel of Our Lady of Graces was eventually handed over to the Capuchin Order and replaced by the present church during the 1740's.

Detail of lower tier showing St Ursula's Votive Procession on its arrival at the then wayside chapel.

votive procession winding its way uphill on its return to the *Matrice* (Azzopardi, 1993: 5-13).

Following the earthquake of February 1743, the original pious intent of this votive procession was extended to reflect the Saint's repeated miraculous intercession in the same analogous scare. A second votive procession with the effigy of St Ursula was eventually established during the early nineteenth century in thanksgiving for the Saint's mediation during the plague outbreak of 1814 (Vella Apap, pp 61-4). This second procession used to be held on the third Sunday of September and flow towards St George's Parish Church. Both votive processions with the effigy of St Ursula were suppressed in 1968 (Vella Apap, pp 61-4).

Acknowledgement

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