

Buildings are not protected against earthquakes

□ “There is no excuse for ignorance – the writing is on the wall” – architect

Herman Grech

Buildings in Malta offer no protection against seismic activity and it was high time that new building regulations came into force, according to specialists in the field.

Practically all of Malta's buildings would be affected in case of a very strong earthquake, since no building code exists and designs are not submitted for review, which means that structurally, nobody in Malta is accountable in case of damage.

Constructing buildings to cope with tremors should be the norm and not the exception, the specialists insisted.

Malta was jolted by an earthquake measuring nearly four on the Richter scale on July 7 and even though it did not cause any structural damage, several people scurried to their insurers to query about their cover.

In Malta, only a few buildings can take a certain degree of seismic activity. These include the Delimara power station, Portomaso and the new hospital.

Architect Denis Camilleri, author of the study “Malta's Risk Minimisation to Earthquake, Volcanic and Tsunami Damage”, said the country cannot afford to wait for a major disaster before seriously enhancing strategic preparedness and mitigation management.

He asked why the building regulations, drafted way back in 1995, and which took into consideration the need to design buildings seismically, had still not been put into force.

The Building Industry Consultative Council had even

organised courses for architects guiding them in the field of earthquake design.

During an earthquake, walls shake while the roof remains static until the movement of the walls causes the roof to cave in.

In Malta, the local load bearing construction system consists of masonry units laid on a bed of mortar. To be considered structurally stronger, the load bearing wall should have a minimum thickness of 175mm for zones of low seismicity.

Mr Camilleri explained that wall construction can be strengthened if it is modified to include an outer skin of masonry, with the inner skin constructed in hollow concrete blockwork, infilled with concrete and reinforced at corners to tie in with the overlying concrete slabs. Steel structures embedded within the concrete can also help.

Designing a building to cope with earthquake would not cost the earth, he added, even if some architects envisage costs to rise to some 10 per cent of the value of property.

Mr Camilleri said a lot of structures nowadays were built to cater for commercial establishments or garages at ground or basement level and these made them more susceptible to damage in case of movement.

Mr Camilleri said other less seismically-challenged countries like Switzerland were abiding by strict building standards so there was no reason why Malta should not follow suit.

Frederick Ellul, an architect who completed a thesis about earthquake effects on buildings in Malta, believes a tremor measuring 5.5 on the Richter



Portomaso, the new hospital, and the Delimara power station are among the small number of buildings which can take seismic activity.

scale was enough to cause structural damage.

Magnitude on the Richter scale increases exponentially which means an increase of one in intensity could create an impact 10 times as big.

Mr Ellul, who is currently reading for his doctorate at the University of Bath, said it was unacceptable that the public relies on the capability of the architect for his building when it should be a regulatory body that should at least recommend the minimum safety requirement.

No precautions can be taken against earthquakes of a certain magnitude but the repercussions of a relatively small scale event on unprotected buildings might prove disastrous, he warned.

Mr Ellul believes that high-rise buildings, especially the modern ones built by speculators, were the perfect prey for

seismic collapse, in case of a strong quake.

During Mr Ellul's visits to earthquake-stricken regions, he witnessed first hand how it was negligence which often led to building collapses, and often loss of life.

These were evident, he said, in the November earthquake in Molise, Italy and the tremor in Turkey last May, both of

which levelled off schools packed with children.

In Turkey's devastating quake of August 1999, flimsy construction was what mainly contributed to the heavy death toll.

“The need to update our construction practices is vital. There is no excuse for ignorance – the writing is on the wall,” Mr Ellul said.

