CECILIE & JACOB BUGGE

Lars Flink, Chairman Technical Board
CEN Management Centre
36, rue de Stassart
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Belgium

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Dear Chairman,

Obviously, buildings erected today will have to withstand the environmental actions of the future, not those of the past.

It is well known that a number of meteorologists anticipate weather pattern changes that will inevitably lead to higher loads on buildings; some believe that the recent conspicuous incidences of extraordinary weather are only the beginning of this. Furthermore, it is well known that such changes are possible, probable, or even certain, consequences of the global warming according to the IPCC.

I therefore venture to suggest your including the effect of conceivable unfavourable weather pattern changes in the bases for the calculation of loads on buildings with a normal service life, by prescribing fundamental load values of environmental actions based upon the most unfavourable assumptions and projections supportable by facts.

Wherever relevant, this would apply to snow loads, wind actions, and actions from waves, currents, and ice, effects of changes in sea and groundwater levels, and flooding as a consequence of wind, precipitation, and melting of snow.

I believe this would be the right proactive approach to best secure life and property by seeking to uphold the hitherto level of safety. Relying on distributions covering past years would be a retroactive approach which may lead to diminishing safety which again may lead to loss of life and property.

A proactive approach may lead to unnecessary, exaggerated, erroneous, or even detrimental, precautions if not based upon facts and reason; on the other hand, a retroactive approach may lead to lack of adequate and timely action. Obviously, both errors may be aggravated if any of the parties in the case may derive an advantage from supplying incorrect or inaccurate information.

In connexion with safety and loads on buildings, the proactive approach may prove to be well on the safe side, but the consequences would be limited to erecting buildings with more than necessary strength, and the extra costs would be limited as compared to the overall build-

ing costs. Allowing for increased imposed loads on a building is an obvious and responsible measure if a change in use is conceivable. Allowing for increased environmental actions on a building is a no less obvious and responsible measure since an unfavourable change in weather patterns is conceivable.

Conversely, the retroactive approach may prove to be on the unsafe side, and the consequences might not be limited to an increase in unnecessary loss of life and property, but might lead to unacceptable and incalculable losses; it might even threaten the entire insurance business, thus removing the general securing of property.

I have not taken part in standardization work apart from DS 472, Dansk Ingeniørforenings Code of Practice for Loads and Safety of Wind Turbine Constructions, and only recently have I seen the new set of Danish structural design codes.

It was a surprise to find that in the 4th edition of DS 410, the fundamental value of the basic wind velocity $v_{b,0}$, determined in section 6.1.1, had been reduced from the previous value in the 3rd edition of DS 410, from 27 m/s to 24 m/s, for Denmark as a whole, the exception being the coastal area of Western Jutland.

I am fully aware that the said reduction is fully supported by experience, and that it would be justified under wind distributions with unchanging averages and deviations.

I am not arguing against the said division of the country which is fully supported by differences in the geostrophic wind; actually, it might be argued that further division across Denmark, as a continuous transition or in steps, would be justified.

The said surprise initiated the considerations that led to this letter; from an uneasiness about the reduced wind action, over a wish to use increased and thus safer load values, to the conclusion that the present codes of practices are actually based upon a retroactive approach, and that their firm basis in distributions covering many years may be a weakness rather than a strength.

I wish to mention that I have never taken part in any kind of debate about the IPCC or changes in weather conditions.

Yours faithfully,

Jacob Bugge.