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3rd April 2014

Dear Mr Belyavsky,

### **Shukhov Radio Tower**

Thank you for your letter concerning the Shukhov Tower in Moscow, and your acknowledgement of our concern regarding its future.

You say that your main concern is that whether the tower can be renovated without dismantling the construction.

Firstly I can say that we believe that it is highly likely that the tower can be renovated without dismantling it. Dismantling it is inadvisable for the following reasons:

- a) the cost of doing so and of repairing it and reassembling it will probably be more expensive than repairing it in situ;
- b) damage will be caused to the structure by dismantling it;

c) Moscow will lose an important element of its skyline during the process of repair, which may last a considerable time.

As a first step, we recommend a detailed survey of the tower. The Shabolovka Tower is an accessible structure in which any weaknesses will become apparent through thoroughly surveying it. I enclose a note from engineer Stuart Tappin, who has worked on many 20th Century buildings in the UK including Battersea Power Station. In this note he suggests methods for creating a survey of the tower with the aim of repairing it on site.

The following points and suggestions are the result of a conversation with Alan Baxter and Michael Coombs, two of the UK's leading engineers. They in their firm of Alan Baxter & Associates have been active in the field for some 40 years and have worked on some of the most important historic structures in the country and overseas.

It must be taken into consideration that Mr Baxter and Mr Coombs have not visited the tower and therefore do not have first hand knowledge of it. However, the purpose of this letter is to illustrate that it is possible, logical and desirable from an engineering and conservation point of view to repair the tower in situ.

There have been great advancements in works to major steel structures and in corrosion protection technology in the last 10-15 years as seen recently with the new paint used on the Forth Bridge in Scotland. This has considerably reduced the maintenance load on this important historic bridge and it will probably not have to be repainted for some 40 years or more. The work involved blasting all previous layers of paint off the bridge, allowing repairs to be made to the steel.

Tower-like historic structures in the UK include very tall church steeples which are more complex to repair and maintain than in the case of the Shabolovka tower. There is considerable expertise in the UK in doing this work without scaffolding.

The Shabolovka Tower looks as if it will respond well to an imaginative restoration sequence using the actual tower as the access – it's ideal

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with its platforms and skeletal form. There should be many ways to reach all parts of it including suspended access platforms, absailing, window jack scaffold and other methods. There is likely to be an interactive way of using the tower itself to facilitate access to all areas.

The quality of the steel with which the structure was built is probably irrelevant, the structure is almost 100 years old, it has proved itself and stood up to harsh winters and storms.

In terms of repairs where they are needed it may well be a matter not of removing pieces but rather of adding splints on to weaker parts for support. This may prove to be the simplest, least traumatic and safest way to make the structure safe. This is a common way of dealing with structures in the UK and it can be done in a tidy way that does not detract from the silhouette or appearance of the tower. We call it the "helping hand" approach – it needs more intellectual effort but is quicker and cheaper than renewal and continues the authenticity of the structure.

Once again, it is important to stress, that any works should be performed only after a detailed survey of the tower and that the methods of the survey should be made public.

I look forward to hearing from you. SAVE Europe's Heritage would be happy to be of further assistance.

Best wishes,



Clem Cecil  
Director, SAVE Europe's Heritage  
Chairman, the Moscow Architecture Preservation Society