現代を見る Lesson 12　Concrete　No1

[1] Concrete has allowed humans to make great cultural and social achievements.

However, producing a huge amount of this material also (1)damages the health of the earth.

Concrete clearly illustrates the urgent problem which humanity faces

: in the attempt to make our lives more physically comfortable, healthy, and secure,

we actually endanger our very existence – along with all other life on our planet.

[2] As an invention, concrete has been a big success.　We humans can build

many different things with this remarkable material.　It is readily available,

can be molded into any shape when wet, and is strong and enduring after drying.

We use it to make roads, sidewalks, buildings, tunnels, bridges, and dams

– the list of infrastructure in which it is used goes on and on.

In fact, concrete is the most widely used man-made material in the world.

[3] While concrete has proved to be a (2)phenomenal success as a building material,

its widespread use has created serious environmental problems.

Concrete production makes up about 8% of global CO_2 emissions,

making a direct contribution to global warming and climate change.　In addition,

the production of concrete is responsible for almost 10% of global industrial water use.

This can cause major problems in regions which suffer from water shortages.

Furthermore, the collection of sand to make concrete damages beaches and coastal wildlife.

____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____

[4] Indirectly, concrete contributes to a loss of biodiversity and to the global mass extinction which we are currently facing. We humans destroy natural habitats for urban and infrastructure development. When lands and river banks are cleared and covered in concrete, many plants and animals lose their (3)places to live.

(4)This destruction of natural environments is also accompanied by the loss of the essential ecological functions which those environments carry out. These functions, on which human and all other life depend, include the pollination of flowers, oxygen production, and water purification.

[5] (5)Awareness of the problems caused by too much concrete has begun to grow. To deal with these problems, some researchers and engineers are exploring stronger structures so that less concrete is required to do the same job. Others are working on better recycling of used materials and improved maintenance of existing infrastructure. Some governments are introducing new environmental strategies such as putting taxes on concrete use.

[6] So far, however, our dependence on concrete remains (6.), like the substance itself. About four tons of concrete are produced annually per person worldwide. In fact, concrete may already outweigh the combined mass of every tree, bush, and shrub on the planet. Global production of concrete has doubled over the past fifteen years and will continue to increase without effective control measures. Concrete demonstrates that we humans face our most important and pressing construction project yet: how to build a sustainable relationship with the natural world.

____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____