

Contents

UNIT 1	Elegant Demolition	「美しい」ビル解体	6
UNIT 2	Ayato Takada and the Ebola Virus	エボラ出血熱に挑む日本人研究者	10
UNIT 3	Japanese Rocket Science	植松努さんと下町ロケット	14
UNIT 4	Drones	社会問題になってきたドローンの使用について	18
UNIT 5	Whistleblower Engineer Fights Giant Monsters and Wins!	東電のトラブル隠しを内部告発	22
UNIT 6	AI	人工知能が小説を「執筆」?	26
UNIT 7	Mitsubishi Regional Jet	史上初の国産ジェット機 MRJ	30
UNIT 8	Johannis de Rijke	日本の治水事業に貢献したオランダ人土木技師について	34
UNIT 9	Child Proof Technology: A Disaster Waiting to Happen	六本木ヒルズの回転ドアの事故について	38
UNIT 10	A Breach of the Public Trust	東洋ゴム工業の不正問題	42
UNIT 11	Scientific Accountability	科学における説明責任について	46
UNIT 12	Living Fossils	カブトガニの保護活動について	50
UNIT 13	Snow Brand	雪印乳業食中毒事件について	54
UNIT 14	The Corporate Culture of Concealment	三菱自動車工業のリコール隠しについて	58
UNIT 15	Problems in Medical Ethics: Gunma University Hospital	群馬大学病院の手術死問題	62

Elegant Demolition

「美しい」ビル解体

大成建設が開発した従来のビル解体工事の工法とは異なる画期的な工法は、ものづくり大賞など国内の技術賞を数多く受賞した夢の工法とされています。その工法を次の英文から読み取ってみましょう。

001

What do you imagine when you think of building demolition? Do you imagine a giant steel wrecking ball, smashing into a concrete wall and then huge chunks crashing down with lots of noise and dust? Or is it the spectacular sight of a building being blown to bits using explosives? There is usually a count down – 10 – 9 – 8 . . . 1 – ZERO! Kaboom! The tall building falls straight down, followed by a huge cloud of dust.

Take a look at words used to describe such demolition: *wrecking*, *crash*, *smash*, *noisy*, *dusty*, etc. These are words that describe a primitive method of destruction. They really don't match up with the current idea of what we think of as high technology.

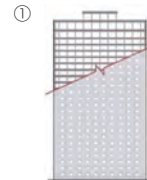
However, there is a new way to bring down old buildings that uses much more advanced techniques. Here are some of the words used to describe this new method: *novel*, *effective*, *safe*, *efficient* and even *elegant*. It was created by a Japanese construction company and can take down very tall buildings quietly and cleanly. The Taisei Corporation has developed the Taisei Ecological Reproduction System (Tecorep System). It is the first of its kind in the world and Hideki Ichihara is the engineer responsible for developing the system. He described it as being more disassembly rather than demolition.

This new method involves taking a building apart, floor by floor, from the top down, using a unique jack system to support the roof. The roof is lowered after the uppermost two floors have been taken out. Keeping the original roof protects the project from the weather and reduces dust and noise. Beams, steel columns and the flooring are removed from each level last, after everything that can be removed has been removed. Since building components such as steel columns, beams and flooring are disassembled in the closed

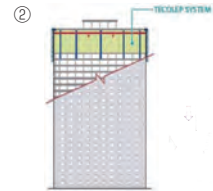
demolition

(ビルなどの)取り壊し、破壊
a wrecking ball

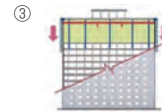
建設解体用の鉄球



Existing Building



Set up TERCOP SYSTEM



Dismantle Structures/
Exteriors Lower

The Taisei Corporation

大成建設

Tecorep System

テコレップシステム

Hideki Ichihara

市原英樹

jack ジャッキ

flooring フロア、床板

column 柱

beam 梁

30 space with the huge roof as a kind of cap, people passing by on the
outside usually only notice that the building seems to be slowly and
mysteriously shrinking.

One of the reasons this method is described as being elegant
is because of the way it has been so carefully thought out. For
35 example, the cranes used to lower the disassembled parts use
the stored electric energy generated by descending heavy loads.
Apparently, when approximately five tons of material is lowered
from a height of 100 meters, 100 kilowatts per hour of electricity
is generated. So the electric cranes operate only by the energy they
40 themselves produced in lowering the materials and there is even
enough energy for running other equipment on the site.

Such efficiency results in much lower carbon emissions. Also,
the fact that much of the disassembled materials are sent for
recycling makes this the most eco-friendly method in the world.
45 Energy conservation and generation, environmental protection and
intelligent recycling are all incorporated into an operation that is
usually messy, dirty, wasteful and dangerous. It is just the opposite!

There is great potential for this new method since there are more
than 800 aging high-rise buildings in Japan. Keep your eyes open.
50 If you see a building begin to shrink – don't worry, it's all right! It
is just a construction company quietly taking down a building using
responsible methods to protect your air and quality of life.

(552 words)

cap キャップ、ふた

carbon emission
炭素放出

messy ごみごみしている

aging 老朽化した



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Exercises

A 設問に答えなさい。

1. ビル解体に関して、本文中で述べられている従来の工法と新しい工法を説明している次のそれぞれの語の日本語の意味を答えなさい(safe の意味は与えられています)。

・従来の工法

wrecking	crash	smash	noisy	dusty

・新しい工法

novel	effective	safe	efficient	elegant
		安全な		

2. Keeping the original roof (l. 25) に関して、どういう利点があるのか日本語で答えなさい。

3. 新しい工法の特徴を示す語句を3つ抜き出し、それぞれについて、具体的にどういうことか、本文に沿って日本語で説明しなさい。

語句	説明

4. One of the reasons this method is described as being elegant is because of the way it has been so carefully thought out. (l. 33 ~ l. 34) を日本語に訳しなさい。

B 本文の内容に合うように、質問の答えとなるものを a ~ d から選びなさい。

- Why might this new method of demolition be described as elegant?
 - Because the workers are wearing high fashion clothing.
 - It is elegant because explosives are only used in the beginning.
 - It is because it is a traditional method of demolition.
 - Because it is more like thoughtful disassembly than demolition.
- Where does the power come from for the electric cranes?
 - It comes from lowering the roof on jacks.
 - It is generated by lowering the heavy cranes.
 - It comes from recycling old materials.
 - It comes from lowering heavy loads from a very high place.

003

C 本文の内容と一致しているものには T を、一致していないものには F を記入しなさい。

- () Demolition of tall buildings is usually quiet and clean.
- () Most ordinary demolition operations involve shrinking the building because small buildings are easier to destroy.
- () Wrecking balls generate a lot of electricity.
- () The roof of a building is kept intact until the very last in the new method.
- () We need to put more thought into how to use new technology to replace old, inefficient methods.
- () A lot of intelligent, careful thinking went into the new method developed by Taisei Corporation.

D 次の各文の () の中に入る語を右の欄から選びなさい。必要に応じて語形は変えること。

- I () your house on the way to work.
- I want you to () this as your home.
- The improvements in training () in increased wins.
- Words cannot () our feelings at that moment.
- The DNA samples found on her body did not () a sample taken from the accused.

match up with
think of
pass by
result
describe

E 日本語に合うように与えられた語句を並べかえなさい。

I _____.

私は、彼女がいつも私を批判するその仕方が嫌いだ。

the way / me / always criticizes / she / hate

004
006

F 音声を聞いて、それぞれの英文の後に続くものを a ~ c から選びなさい。

- Older methods of building demolition may include _____.
- People may not notice the new type of building demolition _____.
- The new method takes into consideration _____.

「もの」の一生

工学や技術は単に「もの」を作ればよいというものではなくて、世の中に送り出された「もの」には、メンテナンスも必要であり、使用後の処理の問題もあります。日本は高度成長期以来、トンネルやビルなどたくさんの「もの」を作ってきましたが、やがては作られた「後」のことも重要になると以前から言われていました。今日では、本ユニットの事例のようなビル解体技術の見事さが脚光を浴びて称えられるようになりました。解体の過程で生じる粉塵の量や騒音を減らすこともまた、技術者が考えるべき課題として現在の社会においてますます要請されるようになってきているということでしょう。