1) The whole world was horrified when the World Trade Center in NYC was destroyed in 2001. Now, a new structure has started “rising into the skies” there. Draft a brochure about the Freedom Tower and some other high-rising buildings which are either already being built or at least planned worldwide. The brochure can then be distributed to other classes which discuss a similar topic. (Excerpts A, B, D, F)

2) How can architects nowadays improve the security measures for skyscrapers and help the owners save energy? You are working for an architect bureau and have to comprise suggestions for energy saving in high buildings for a meeting with prospect customers. Write a handout in which you summarize the most important facts and figures (Excerpts A, B, D, E)

3) Why do you think skyscrapers are again and again fascinating for most people worldwide? Express your personal view in a newspaper article for the weekend issue of the New York Times.

Excerpt A

New York Ground Zero: Windmühlen statt exotischer Gärten

Der Grundstein ist gelegt - aber an den ursprünglichen Plänen für die neuen Wolkenkratzer am Ground Zero ist schon viel geändert worden.

von CHRISTINA BÖCK - Die Presse, 7. Juli 2004


Tall Orders
How architects are blending security and technology into big, beautiful buildings
By RICHARD LACAYO – TIME, August 2, 2004

On the day the World Trade Center fell, the Empire State Building once again became the tallest building in New York City. In the months that followed, six of its commercial tenants ran off. They did not want to be in the tallest anything, anywhere, anymore. Within weeks of 9/11, Donald Trump cancelled plans to make his new apartment-office tower in Chicago the tallest in the world.

Three years later, big is beautiful again. On July 4, 2004, New York Governor George Pataki and New York City Mayor Michael Bloomberg presided at the groundbreaking for the Freedom Tower, the office building that will rise at the World Trade Center site. This building will not only symbolize rebirth at the Trade Center site but also demonstrate that American thinking and construction can compare with the best new examples in Europe, Asia and elsewhere. If it is constructed as envisioned, its spire will reach the record height of 1,776 ft.

New skyscraper projects are under way once more elsewhere in the city and around the country. Meanwhile, outside the U.S., where the taste for tall buildings never really abated, the skyscraper has also been poking its head up in very different ways, and not just for reasons having to do with security. After 9/11, skyscrapers first have to be places where people can feel comfortable on those high, exposed floors.

Down below, in the occupied floors, the building will incorporate a whole spectrum of new, post-9/11 defensive features. Exit stairways will be wider and will open directly onto the street. There will be dedicated stairwells for use by fire fighters. Air filters will block chemical or biological agents. The building "core" - the part surrounding elevators, stairwells and safety systems — will be solid concrete, not steel girders of the kind at the Trade Center that were easily sliced by the intruding planes.

But engineering isn't just what military strategists call a force enhancer. In the right hands it's also a path to new kinds of beauty. Just look at Piano's diaphanous London Bridge Tower (right), a slender glass pyramid that forms a glistening...
You get a grasp of what ingenious engineering is all about from the London headquarters of the insurance firm Swiss Re (below), designed by Norman Foster. Even before it opened in April 2004, it was known as the gherkin (= die Gewürzgurke) because it rises against the sky like a plump green pickle. It too has a triangular steel trusswork, a structural necessity that doubles as a twirling surface pattern. But the building’s signal feature is the inclusion of large interior gardens throughout. “Those become the lungs of the building,” says Foster. “They allow fresh air, light and views into the interiors.”

The Spanish designer Santiago Calatrava is by training both an architect and an engineer, and his two new high-rise projects wear their engineering on their sleeves.

**Turning Torso**, an apartment and office tower under construction in Malmo, Sweden, spirals suavely around its central core like a plug of twisted taffy, producing a form that looks stable and unified but also pliant and voluptuous.

**Kissing The Sky**

It used to be that the only way to build a skyscraper was up. But now the tall building is being totally re-imagined and taken in some very unusual directions.

By RICHARD LACAYO – TIME, December 27, 2004

Daniel Libeskind, together with Zaha Hadid (London) and Arata Isozaki (Japan), has designed an office complex for a parklike setting in Milan, Italy. The buildings will house government offices.

The past decade or so has been a time of virtuoso architects, not just Libeskind, Hadid and Isozaki but also Frank Gehry, Santiago Calatrava, Norman Foster, Renzo Piano and many others, all of them working in very different styles but with the common impulse to knock apart the familiar glass-and-steel box and put it back together in unheard of ways.

Piano and Foster have been building tall for much of their careers, but until recently many of the others worked closer to the ground. Gehry’s Guggenheim Museum in Bilbao (Spain), reclines like Venus on her couch. Calatrava’s Olympic Stadium in Athens, seen by billions on television during last summer’s Games, is a voluptuous, low-slung bowl.

In the months right after Sept. 11, when smoke was still rising over the ruins of the Twin Towers, there were people ready to write the obituary for skyscrapers.

Tall Orders, from: TIME, August 2, 2004
Tall buildings were too inviting as targets for terrorism, too disruptive to the urban fabric and not even particularly profitable, since so much of the rentable floor space was taken up by elevator shafts. The only clients still interested in building them were in nations that wanted a symbol of their arrival as a contender in the global market, mostly in Asia’s Pacific Rim.

After Sept. 11, security and safety became much larger issues in the thinking of architects. More lives might have been saved at the Twin Towers, if the plaster-wallboard interiors of the exit stairwells had not collapsed, blocking some exit routes. The Trade Center depended on a complicated structural system of interior and exterior steel columns. Many new towers favour super-strong concrete cores that not only brace more firmly against wind — and at 2,000-plus feet, you don’t want to sway much — but also enclose emergency stairwells in solid concrete as well. Tall buildings are now more likely to have duplicated communications systems: if one goes out in an emergency, another can still transmit directions to people and rescuers inside.

Kissing the Sky, from: TIME, December 27, 2004

Excerpt D

High Time

Despite the attacks on the World Trade Center, buildings are reaching for the sky—at least in Asia and Europe. The trend is leaving U.S. developers in the lobby.

by Jerry Adler - Newsweek, May 27, 2002

The height of skyscrapers has been limited by many factors, from zoning to the danger of having it blown over in a storm, but the owner’s modesty has rarely entered into it. Just as the brick towers of New York and Chicago once symbolized America’s aspirations to overtake the gable-roofed counting-houses of Europe, today’s glass and metal obelisks make a similar assertion about China and its East Asian neighbours, like Malaysia, which put its capital of Kuala Lumpur on the business map with the 1,438 foot Petronas Towers.

“It’s an ego issue and a status thing”, says Hong Kong architect William Lim. “High-rises are the pyramids of our time.” And next to money, there’s nothing dearer to a developer than status. There are three or four buildings underway in Asia that are vying to be the world’s tallest.

The contest to succeed the Petronas Towers is especially intense between Shanghai, Hong Kong and Taiwan, all of which have projects underway that will be about 100 stories and roughly 1,500 feet tall.

“Shanghai to build world’s highest tower despite 9/11” boasted People’s Daily, referring to the Shanghai World Financial Center, whose immense size will reinforce its daring geometry – a square at the base, sliced away by two great arcs to a knife-edge roof. To relieve the wind pressure of the occasional typhoon, the architects designed a 164 foot cut-out near the top. But the hole’s circular shape reminded some officials of the Rising Sun flag of Japan, so it had to be modified with a bridge across the bottom.

In Hong Kong, Union Square is a tapering tower that will be the centrepiece of a nearly 20 million-square-foot development built around a transit hub.

Even in the United States, as the 9-11 attacks have receded, so has some of the initial concern over skyscrapers’ safety. Engineers are still debating whether the Twin Towers’ unique structure should be credited for surviving the initial crash, or blamed for collapsing in the subsequent fires, or both. But the point is that it was unique, utilizing closely spaced columns connected to a steel core by relatively light-weight floor trusses. Tall buildings today are more commonly designed with cores of high-strength concrete, linked by big girders to massive perimeter columns. Whether or not such a building would stand up longer in a crash and fire, one would hope that its thick concrete core would better protect the exit stairs and elevators than the Twin Towers’ gypsum board.

Buildings taller than 80 stories, need so many elevators that the shafts tend to swallow the lower floors. But elevators can be made more efficient. In the future, passengers will punch their floors into keypads in the lobby and be directed to a specific
elevator, so that people going to the same floor travel together.

The other area of progress is in energy use. Ever since the first energy crisis, engineers sought to shut out heat by covering buildings with what London architect Marco Goldschmied of the Richard Rogers Partnership calls “all those rather nasty blue and green colours we saw in the 1980s.” But new window glass achieves even better insulation without any tint at all – which in turn saves more energy on lighting. To maximize that advantage, Carl Galioto of Skidmore predicts that over the next decade office-ceiling heights will gradually increase by as much as six inches (from around nine feet now) - which, naturally, will tend to make buildings even taller.

High Time, from: Newsweek, May 2, 2002

Excerpt E

Top 10 Ways for Commercial Buildings to Save Energy

1. Check that Equipment Is Functioning as Designed
2. Consider Your Cleaning Options
3. Encourage Tenants to Turn Off Equipment
4. Use High Efficiency LED Exit Signs
5. Institute an Energy Awareness Program
6. Install Monitor Power Management Software
7. Change Incandescents to CFL and HID
8. Harvest Daylight
9. Evaluate After Hours Usage
10. Adjust Ventilation


Excerpt F


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