The Story of the Clock Tower, the Great Clock and the World's Most Famous Bell

Created by students at St. George's School in Camberwell, London.
The Palace of Westminster was a Norman palace, which had been used by Parliament since the 13th century.

During the night of 16th October 1834, the Palace of Westminster burned down.

Londoners watched from the river as the buildings were completely destroyed.
After the fire, Parliament needed a new place to have their meetings. In November 1835, a Special Committee of Parliament announced a competition. Ninety-seven architects submitted 400 designs. We invite architects to submit designs for a New Palace of Westminster.

The New Palace needed to fit in with nearby buildings, including Westminster Hall and Westminster Abbey.

Ninety-seven architects submitted 400 designs.

Here are a few of the entries:

Imagine if the Palace of Westminster looked like this!

Or this!

And here is the winning entry by Charles Barry.

Preliminary Study for the Houses of Parliament, South Front, Charles Barry.
From the RIBA Library Drawings Collection.

Where's the clock tower?

So that's the design for the New Palace of Westminster?

If you look closely, you can see a clock tower.

But this was only an early drawing. Charles Barry changed the design, which is why the New Palace of Westminster looks different than this!

TERRIBLY SORRY!
Due to licensing restrictions, we regret we cannot print this image within the web version of this booklet.
The Parliamentary Office of Works was pleased with the design and the Special Committee approved the design in April 1836. They added a clock tower to their design, which included a huge clock, four faces and an hour bell weighing 14 tons.

Charles Barry was chosen as the architect. He and his assistant, Augustus Welby Pugin, worked on the final design together.

Let's make the clock tower really big. I can do the decorations for it.

Great idea, Augustus.

Charles Barry

Augustus Welby Pugin

It should be a king of clocks, the biggest the world has ever seen, within sight and sound of the throbbing heart of London.

The Parliamentary Office of Works was pleased with the design and the Special Committee approved the design in April 1836.
In September 1843, they started building the clock tower, almost 9 years after the fire!

We’re building the clock tower from the INSIDE out, so nobody will see any scaffolding on the outside!

In 1844, the designs for the New Palace of Westminster were displayed at the Royal Academy of Art. Many people were upset; they did not like the clock tower.

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Why are they wasting money on that clock?

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Design for a Clock Face for the Houses of Parliament, Charles Barry.

from the RIBA Library Drawings Collection.
But the decision had already been made. Parliament would have its clock tower. And the clock tower needed a Great Clock!

Charles Barry asked Benjamin Vulliamy, Clockmaker to the Queen, to design it.

Other clockmakers were upset. They also wanted a chance to make the Great Clock.

That’s NOT fair! There should be a competition!

I must protest!
To be fair, it was decided that George Airy, the Astronomer Royal, would write a specification. He invited 3 clockmakers to submit their plans and then decided which clockmaker would make the Great Clock.

The clock should be accurate to within ONE SECOND of time. It will be the largest and most accurate public clock in the world!

Edmund Denison helped George Airy decide.

Of the designs, the one by Edward Dent was the best. He and his stepson Frederick were chosen to build the clock. Edmund Denison suggested changes to improve their design.

Edmund Denison invented a new type of escapement which made the clock very accurate.

The Dents started building, with Denison’s help.

By 1854, the Great Clock was finished! But the clock tower wasn’t finished. It was time to make the bells! Bell foundries were invited to submit costs for casting the bells.

Warners Foundry got the job. On 6th August 1856, they cast the big bell in Stockton-on-Tees. At 16 tons, it was the largest bell ever cast in Britain. It was so large, it couldn’t be delivered by road or rail. It travelled to London by ship. When the big bell arrived, Warners cast the quarter bells at their foundry in London.

There are five bells in total, four quarter bells plus the huge hour bell. Charles Barry wants it to weigh 14 tons!
They delivered the big bell to Westminster. Crowds of Londoners came along to watch.

The clock tower still wasn’t finished, so Big Ben had to wait.

It took 16 horses to pull the weight. We cheered and cheered!

They hung Big Ben in New Palace Yard and tested it. They hit it with a 600-pound hammer.
On 17th October 1857, they tested the bell again. This time, it cracked. The crack was four feet long!

So they broke the bell into lots of pieces.

They put the pieces into a cart and sent it to the foundry.

This time, the Whitechapel Bell Foundry in East London was chosen to do the job.

We'll melt down the pieces of the old bell and cast a new one.

George Mears, Whitechapel Bell Foundry
We interrupt this booklet for a very Important Question:

Why is the bell called ‘Big Ben’?

There are TWO possibilities:

It was named after Benjamin Caunt, a bare-knuckle boxer who was nicknamed ‘Big Ben’.

OR

It was named after Benjamin Hall, who was Commissioner of Works when the bell was cast.

Nobody knows for sure! Take your pick!
Back to our story: On 10th April 1858, the Whitechapel Bell Foundry re-cast Big Ben. This bell weighed thirteen and a half tons.

Big Ben was transported back to Westminster. Londoners stood along the road and cheered the second Big Ben as it passed by.

Let's hope this one doesn't crack!
At Westminster, they raised Big Ben up to the belfry at the top of the clock tower. A team of men worked for several days to raise the bell 200 feet into the belfry. Big Ben is wider than it is tall, so they turned it on its side to fit it into the shaft.

Once Big Ben and the quarter bells were set, they installed the Great Clock. The Great Clock is HUGE! It weighs 5 tons (5,000 kilogrammes) and is about 15 feet (4.7 metres) long!
In May 1859, the Great Clock began ticking. On 11th July 1859, Big Ben struck the hours for the first time.

On 1st October 1859, disaster struck! While striking the hour, Big Ben cracked! The crack was about one foot long.
The experts disagreed on the solution:

- The bell is defective. Break it up and send it back to the foundry!
- Turn the bell, so the hammer will strike a different spot!

According to Charles Barry's design, the face of the clock had BLUE dials!

In the end, George Airy’s solution was adopted. Big Ben was turned, so that the hammer would not hit the crack, and a lighter 400-pound hammer replaced the previous one.

In 1862, almost 28 years after the fire, the Great Clock and Big Ben were complete. And they could start to do their job.

The best part of this story is:
There is no end!
One hundred fifty years later, Big Ben is still in the belfry.
It strikes every hour.
Hour after hour.
Day after day.
Week after week.
Year after year....

And it will continue to strike the hour, long into the future.

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Guy Fox History Project Limited creates publications which encourage children to explore the world around them. To learn more, please visit www.guyfox.org.uk.

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Fast Facts: The Clock Tower

- The official name of the tower is the 'Clock Tower' – NOT Saint Stephen's Tower, as many people believe.
- There are 334 steps to the belfry where Big Ben hangs.
- The clock tower is 97 metres high (316 feet).
- There was a prison room in the clock tower for MPs! The last time it was used was 1880; Charles Bradlaugh refused to take the oath on the Bible and was sent there.

Fast Facts: The Clock

- Its official name is the 'Great Westminster Clock'.
- It is the most accurate public striking clock in the world.
- Each face has an area of 38.5 square metres (415 square feet). That's more than 100,000 times the size of a pound coin!

Fast Facts: Big Ben & the Quarter Bells

- Big Ben is the huge bell which strikes on the hour.
- Big Ben was cast by Whitechapel Bell Foundry, in East London, on 10th April 1858.
- Big Ben weighs 13,700 kilogrammes (13 1/2 tons). That's about the same as an elephant!
- Big Ben is 2.28 metres tall (7 feet 6 inches).
- Big Ben is 2.75 metres wide (9 feet).
- The hammer which strikes Big Ben weighs 203 kilogrammes (448 pounds).
- Big Ben strikes 156 times each day. So, in the past 150 years, he has been struck over 8 million times!
- The Quarter Bells do not have names. They chime in the tones of G sharp, F sharp, E and B.
1834

The Palace of Westminster burns.

1835

Architects submit designs for the New Palace of Westminster.

1836

Charles Barry's design is chosen.

1837

Charles Barry and Augustus Pugin's final design is approved.

1838

Construction begins on the clock tower.

1839

George Airy, the Astronomer Royal, writes a specification, which requires the clock to be accurate to within one second of time.

1840

Edmund Beckett Denison makes changes to Edward Dent's clock design.

1841

Frederick Dent finishes the Great Clock.

1842

Charles Barry's design is chosen.

1843

The Royal Academy exhibits the plans for the New Palace of Westminster.

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George Airy, the Astronomer Royal, writes a specification, which requires the clock to be accurate to within one second of time.

1857

The Royal Academy exhibits the plans for the New Palace of Westminster.

1858

Augustus Pugin dies.

1859

Edward Dent dies.

12 October, 1858: Big Ben is raised into the belfry.

11 July 1859: Big Ben strikes the hour for the first time!

1858

Warners Foundry casts the second Big Ben. It weighs 16 tons!

1859

Whitechapel Bell Foundry casts the second Big Ben. It is transported to Westminster.

1858

Forbes Foundry casts the first Big Ben. It weighs 16 tons!

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Forbes Foundry casts the first Big Ben. It weighs 16 tons!

Explore the history of Big Ben at www.bigbenfacts.co.uk.