Before we begin, we will assume that the gaps from the lattice structure of the former Eiffel Tower will still be present in the new Eiffel Tower, and that the gaps formed by Geomags™ can be neglected since we cannot melt and mold them into solid shapes. We will also assume that Newton will allow the new Eiffel Tower to even exist.

The mass of the former Eiffel Tower is 7.300E6 kg. It is made of puddled wrought iron which has a density of 7.850E3 kg/m^3. By dividing its mass by its density, we get the volume of the former Eiffel Tower to be 9.299E2 m^3. Its surface area is 2.200E5 m^2.

To simplify the approximation process, we can represent the volume and surface area of the former Eiffel Tower with a rectangular prism:

x = length and width of rectangular prism

y = height of rectangular prism

x^2 \* y = 9.299E2 m^3 (volume)

    2 \* x^2 + 4 \* xy = 2.200E5 m^2 (surface area)

    x = 3.317E2 m

    y = 8.454E-3 m

    By intersecting the two curves above, we can find that the dimensions of the rectangular prism are 3.317E2 x 3.317E2 x 8.454E-3 m; however, because the height of the rectangular prism is less than the diameter of a Geomags™ ball (1.270E-2 m), we must refactor the dimensions of the rectangular prism to accommodate at least one layer of Geomags™. This is done by setting the new rectangular prism height (y\_n) to the Geomags™ ball diameter (b), and determining the rectangular prism length and width (x\_n) that produces the same rectangular prism volume:

    r (Geomags™ rod length) = 2.700E-2 m

    b (Geomags™ ball diameter) = 1.270E-2 m

    y\_n = b

    x\_n^2 \* y\_n = 9.299E2 m^3 (volume)

    x\_n = 2.706E2 m

    The new dimensions of the rectangular prism are 2.706E2 x 2.706E2 x 1.270E-2 m. This retains the volume of the former Eiffel Tower but decreases its surface area from 2.200E5 m^2 to 1.465E5 which is still relatively close. Because the rectangular prism is a single Geomags™ ball high, we can treat it as a plane when in terms of Geomags™ instead of meters. The plane is essentially a square grid. The amount (a) of Geomags™ rods in each row or column of the square grid can be found by taking the refactored length and width of the rectangular prism (x\_n), subtracting it by the length of a Geomags™ ball (b), and dividing by the length of a Geomags™ ball-rod pair (b + r). The reason for subtracting (x\_n) by (b) is that the length and width of the square grid requires Geomags™ balls on both ends, and a ball-rod pair will always be missing a ball at one end. The equation is shown below:

    a = (x\_n - b) / (b + r) = 6816 (rounded)

The total number of Geomags™ rods and balls are given by the following equations:

2 \* [a \* (a + 1)] + a^2 = 139,387,200 (Geomags™ rods)

    (a + 1)^2 = 46,471,489 (Geomags™ balls)

    2 \* [a \* (a + 1)] returns the amount of Geomags™ rods in the grid. We multiply 2 to [a \* (a + 1)] because [a \* (a + 1)] only gives the total number of horizontal or vertical rods. We are adding a^2 to this amount because we are inserting an extra Geomags™ rod in between each square of the grid to form a triangular lattice, offering more strength in the structure. This will cause the plane to turn oblique but will be inconsequential since the plane will eventually be taken out of shape.

The new Eiffel Tower will need approximately 139,387,200 Geomags™ rods and 46,471,489 Geomags™ balls.

Constructing the new Eiffel Tower will require an area of flat land. To speed things up, many workers will also be needed. First, we will break down common shapes found in the former Eiffel Tower into reusable Geomags™ parts. Instead of building the new Eiffel Tower by attaching Geomags™ one by one, we will mass produce these parts and attach them to each other. Now, we will begin building from the bottom up. The four legs will each be built simultaneously by groups of workers. To ensure that each leg will be symmetrical to the others, a single architectural plan will be drawn for each group to follow. Next, the first platform will be built on top of the four legs, with scaffolds to hold it up until it is fully constructed. We will then repeat the previous steps to build the continuation of the four legs and the next three platforms. Cranes will be needed to transport workers and materials as the construction of the new Eiffel Tower progresses to higher altitudes.