What is claimed is:

1. A system for determining and drilling a predetermined drilling point on a surface in a predefined region of a building, comprising:

a BIM-based building model corresponding to the building, which is created using the building information modeling (BIM), wherein information related to predetermined drilling points of the surface of the building is identified and recorded in the BIM-based building model;

a positioning unit in communication with or loaded with the BIM-based building model, wherein two or more control points are selected in the BIM-based building model, and the positioning unit is configured to identify two or more reference points in the predefined region of the building, the two or more reference points corresponding to the two or more control points in the BIM-based building model,

a drill device movable to the surface of the building to drill the surface at the predetermined drilling point,

a machine vision unit configured to capture and process images of the predefined region to recognize the reference points, thereby to determine a position of the predetermined drilling point and generate drilling data associated with the predetermined drilling point;

a control device coupled with the machine vision unit to receive the generated drilling data and programmed to control a drill bit of the drill device to coincide with the predetermined drilling point and to actuate the drill device to move towards and drill the building surface at the predetermined drilling point with the drilling data.

2. The system as claimed in claim 1, further comprising:

a chassis, and

an apparatus for moving the drill device and arranged on the chassis, wherein the moving apparatus comprises X axis moving means for moving the drill device in a direction of the X axis, Y axis moving means for moving the drill device in a direction of the Y axis perpendicular to the X axis, and Z axis moving means for moving the drill device in a direction of the Z axis,

wherein the X axis and the Y axis define a X-Y plane in parallel to the predefined region, and the Z axis is perpendicular to the X-Y plane.

3. The system as claimed in claim 2, wherein the X axis moving means comprises two X axis linear actuators positioned at two opposite sides of the chassis to drive linear movement of the drill device in the X axis direction; the Y axis moving means comprises one Y axis linear actuator to drive linear movement of the drill device in the Y axis direction; and the Z axis moving means comprises one Z axis linear actuator to drive linear movement of the drill device in the Z axis direction.

4. The system as claimed in claim 3, wherein the moving apparatus is operatively coupled with the control device which is configured to control a X axis electric motor mounted on one of the X axis linear actuators for steering the drill device to move, a Y axis motor mounted on the Y axis linear actuator for steering the drill device to move, and a Z axis motor mounted on the Z axis linear actuator for steering the drill device to move.

5. The system as claimed in claim 4, wherein the X axis and Y axis electric motors are selected from servo motors, and the Z axis electric motor is selected from a stepper motor.

6. The system as claimed in any one of claims 2 to 5, further comprising a marking unit for applying a mark at each of the reference points in the predefined region of the building.

7. The system as claimed in claim 6, wherein the marking unit is operatively coupled with the control device so as to be controlled to move to be coincident with the reference point to be marked and move towards to the surface to apply the mark at the reference point.

8. The system as claimed in claim 7, wherein the marking unit is arranged on the moving apparatus so that it is movable by the moving apparatus.

9. The system as claimed in claim 7, wherein the marking unit is selected from an ink chop or a writing tool.

10. The system as claimed in any one of claims 1 to 5, further comprising a light beam tracker unit for guiding to locate the reference points in the predefined region.

11. The system as claimed in claim 10, wherein the light beam tracker unit comprises a plurality of crosshair laser pointers, wherein each of the reference points are assigned two of the crosshair laser pointers defining a reference region in which the reference point is confined.

12. The system as claimed in any one of claims 1 to 5, further comprising a dust collector arranged in such a manner to collect mortar dust generated in the course of drilling the building surface.

13. The system as claimed in any one of claims 1 to 5, wherein the positioning unit is provided as a robotic total station (RTS) in communication with the BIM-based building

model, wherein the RTS irradiates light beams to impinge the reference points in the predefined region.

14. The system as claimed in any one of claims 1 to 5, wherein the machine vision unit comprises a light source to illuminate the predefined region, at least one camera for capturing images of the predefined region, and a processor programmed to extract and verify information of the reference points from the captured images to determine the predetermined drilling point and generate drilling data associated with the predetermined drilling point.

15. The system as claimed in any one of claims 1 to 5, comprising a load pressure sensor to deliver a load signal indicating a maximum threshold of drilling depth at the predetermined drilling point.