Siebenberg House - Geology

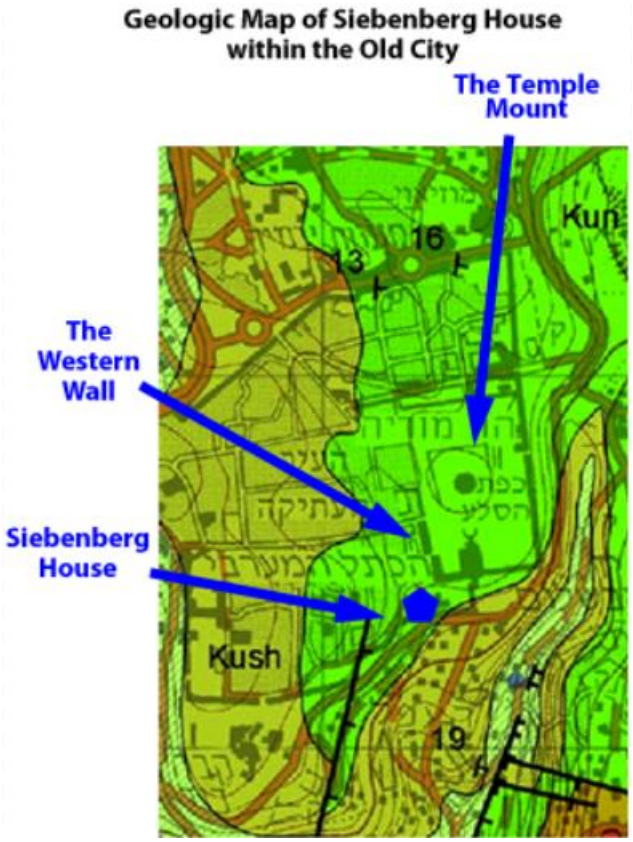

Figure 1 – The above map portrays the Siebenberg House within the Kun Formation, which is primarily a limestone, dolomite, and marl rock. In addition, the proximity of the Western Wall and the Temple Mount to the Siebenberg House is illustrated.

Within the walls of the Upper City (Jewish Quarter), an enormous amount of history is preserved, dating all the way to two thousand years ago. The geology of the area is much older however. Sedimentary rock is known for its ability to preserve fossils. An added bonus is its ability to preserve history, most notably through archeology.

Figure 2 – It is theorized that at the time of the Great Revolt (2,000 years ago) the Jewish People were digging escape tunnels underneath the Upper City (Jewish Quarter). Here is an example of beginning of one such tunnel. We can never know why the tunnel was not completed.

Figure 2 – The excavation site underneath the Siebenberg House has many different colored varieties of Limestone. Here is an example of a redder Limestone rock.

Figure 3 – Throughout history the Jewish people have dug underneath bedrock. This is one such example of bedrock overlaying tunnels, burial sites, rooms, etc.

During the Triassic time period, modern day Israel was situated on the northeast corner of the continent which comprised of now modern day African and Arabian regions as shown in Figure 2 below. Sand deposits as well as marshy soil accumulated, forming a mainly sedimentary geology. As sea level rose, the Tethys Sea flooded the exposed land giving way to a shallow to deep marine environment. Evidence of this environment is made clear due to the extensive limestone and other carbonate rocks located throughout the region [Pereg, 2002].

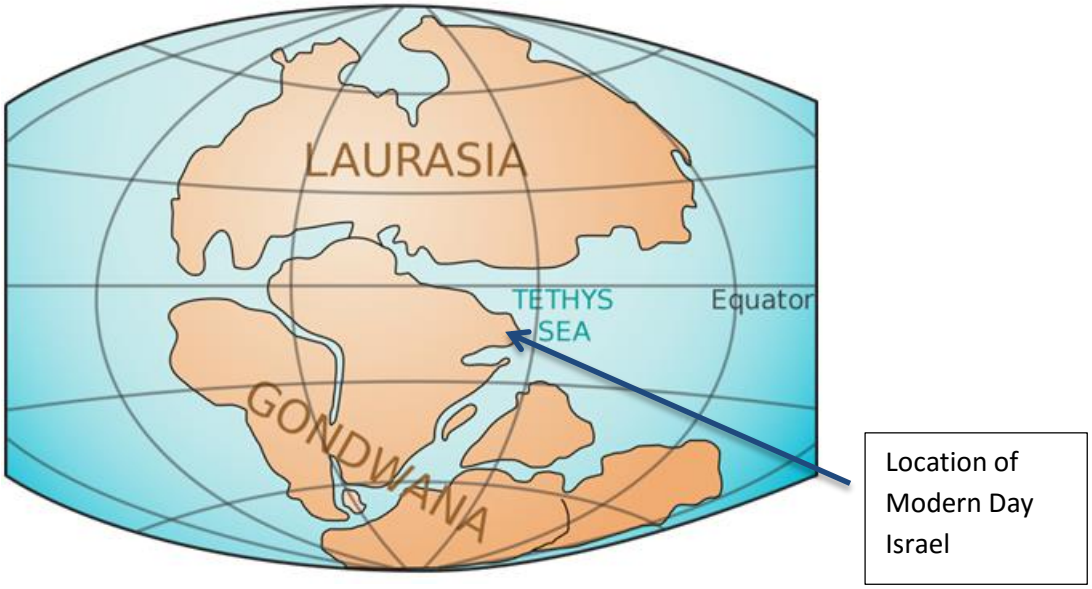

Figure 2 – The set-up of the continents during the Triassic time period.
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Throughout the Upper City there is variable soft rock geology present. Reference Figure 3. The Nezer Formation (Kun) and the Shivta Formation (Kush) were deposited in the Upper Cretaceous time period. The Nezer Formation consists of limestone, dolomite, marl and some chert with sporadic evidence of sand and fossils. The age of the Nezer Formation is Turonian. The Shivta Formation is composed of, "limey dolomite and forms a typical cliff morphology with many caves" [Heinz, 2009]. The age of the Shivta Formation is Turonian as well. From looking at the zoomed in map of the Old City (Figure 1), it is obvious that Siebenberg House is located within the Kun Formation. From analyzing the underground excavation there was also evidence of limestone karstification into Terra Rosa rock.

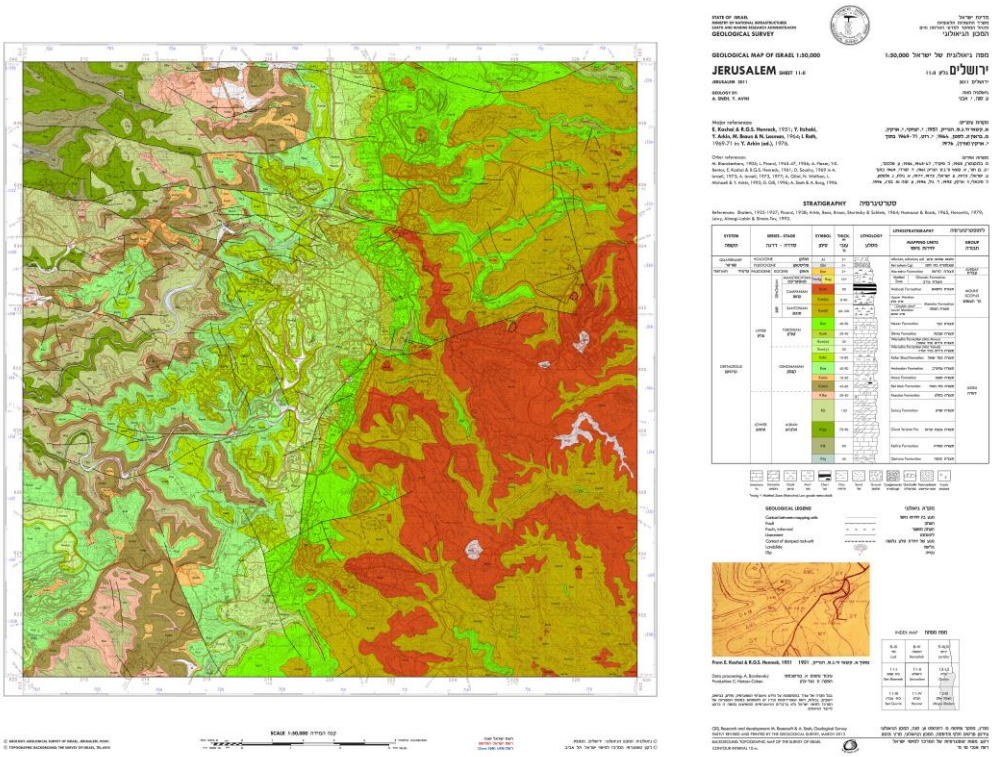

Figure 3 – Geologic Map of Jerusalem provided by the Geological Survey of Israel.

The continuing deposition allows for the preservation of historical events on a much smaller time scale compared to that of the geologic time scale. There are supporting pillars within the excavation site of the Siebenberg House which act as a stratigraphic column of 2,000 years of Jewish history. The destruction of the second temple by the Romans is marked by layers of ash residue engrained in these pillars.

The Siebenberg House sits on extensive underground tunneling. It is possible that upon discovery of these underground caves, the Jewish people then dug further to create tunnel passages within the limestone geology. Historically, some of these tunnels were used for supplying water around the Old City [Yaakov, 2007]. During the Siege of Jerusalem (The Great Revolt) in 70 CE, the Jewish people used tunnels as an escape route from the Romans.

Modern day construction in Jerusalem is done mainly using limestone and dolomite according to law, which requires "all buildings to be faced with limestone, giving Jerusalem its special character," [Yaakov, 2007].

As the Earth continues to change, one can only wonder what future generations will uncover thousands of years from today.

References

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Israel Geologic Survey, Geologic Map of Israel Jerusalem Sheet, 2013.[4]