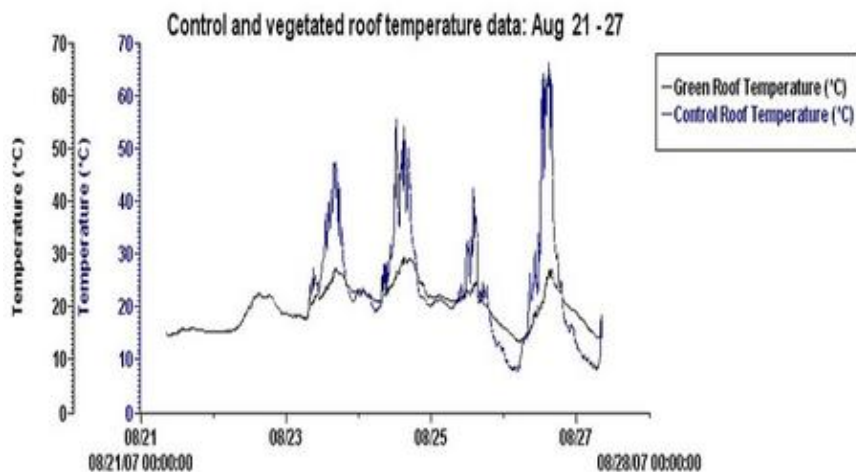

Extended Roof Life & Reduced Life Cycle Costs

Extended Roof Life

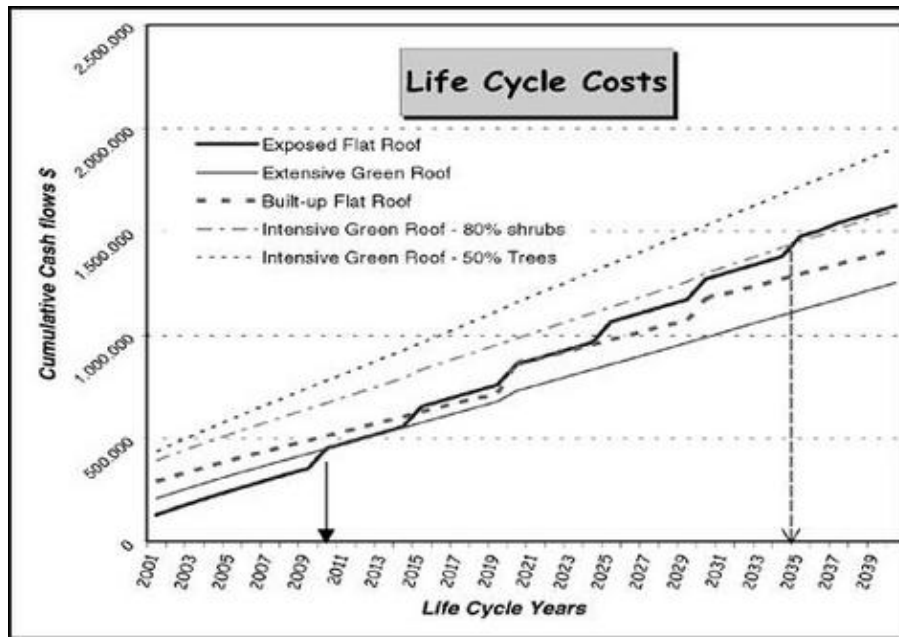
An unprotected roof membrane is more susceptible to breakdown due to exposure to heat, UV radiation and extreme temperature fluctuation. Heat absorption during the day time and heat loss during the night causes damage to the membrane and seams of the roof (Liu, 2004). The graph below documents ongoing RGS field research which illustrates a green roof's ability to reduce temperature fluctuation and exposure to heat at the roof membrane. With a green roof system, protection is provided to the roof membrane due to the vegetation layer and material components of the system. A conventional roof should last anywhere between 15 – 20 years. It is believed that a green roof can double or triple a roof's life as some green roofs in Germany have reached 90 years with many passing the 30 year mark (Peck et al., 1999; Porshe & Köhler, 2003).



Life Cycle Costs

The cost of a green roof system can be a disadvantage. However, studies comparing the life cycle cost of a green roof system and conventional roof systems indicate lower life cycle cost from an extensive green roof system (Wong et al., 2003). Further, other benefits that green roofs provide such as improved aesthetics, increased urban green space and psychological and physical well being has not been assigned a monetary value. Thus, life cycle costs of a green roof could be lowered further if these benefits were included (Porshe & Köhler, 2003).

Extended Roof Life & Reduced Life Cycle Costs



Source: Wong et al., 2003, p. 507