Project Description

Proposed preliminary project outline for Dr. Khoshbin Residence, Aurora, Ontario, Canada
Role: Principal at Green Project Advisors

The design strategy for Dr. Khosbin residence will explore a holistic approach of sustainable design and green architecture both through living spaces and minimize building impact on the site using low impact development strategies. The design intent for this particular residence explore to create a residence as an inviting fun place for a healthy living, a place to work, to study and carry out researches, a place of gathering and worship, a place of healing within the community where we celebrate the rediscovery of traditional medicine and its benefit to the community. The image of the residence should reflect health and inspire the community, therefore free of all harmful chemicals such as formaldehyde, CFC's, HCFC's, asbestos fiber and others.

As a design principal, site and building orientation will be consider to maximize the use of solar energy, protection from winter wind and encouraging natural ventilation during summer. Landscape design will consider interpreting the back yard as private garden, a place of peace and inspiration, a place of meeting with nature and being in contact with natural world; a place to mediate with nature.

I propose to implement the use of solar energy for electricity generation on site, for day lighting, water heating and solar passive space heating since it is a free energy and available all the time. I also propose the use water efficient plumbing fixtures and appropriate strategies for collection of the produced gray water in the building such as laundry and hand sink and shower to be reused for landscape irrigation, janitorial purposes and for flushing toilets.

The construction of wall and roof could be super insulated, super air tight with spray soy base foam and the exterior cladding thermo mass such as brick, stone or masonry concrete or other material of choice. For door and window, low U value *warm edge technology window* and high energy efficient glazing system is highly recommended. Depending on building configuration, if roof is sloped, metal roof is suitable, if flat roof preferred, vegetated roof is another great option which could be also used to produce medicinal herbs, and simultaneously offering a good thermal and acoustical insulation protecting roof membrane against ultra violet rays.

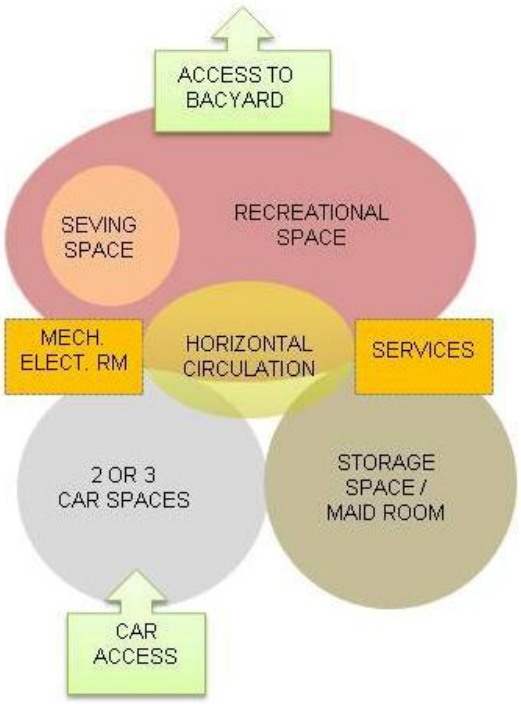
Indoor environment quality and energy efficiency are the main areas that should be given a great importance, use of material VOC free and monitoring indoor air quality using appropriate sensor and automatic air exchange is recommended.

I propose the central mechanical air condition to be a high SEER (Seasonal Energy Efficiency Rating). Central water heater should carry *EnergyGuide* label and all home appliances to be labeled *EnergyStar* per Environment Protection Agency (EPA) standard.

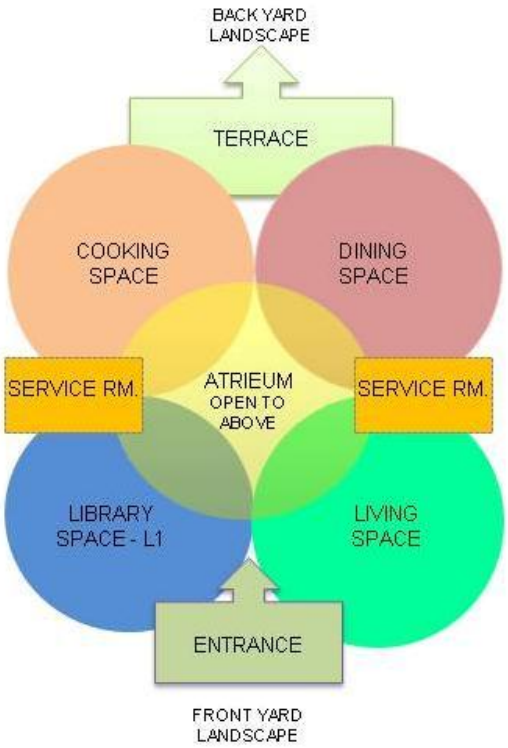
All electrical lighting could be LED (Light Emitting Diode) or Compact Florescent Lighting (CFL) except some low voltage incandescent for task lighting in library or in laboratory area.

Conservation of energy within a healthy environment is an educative process therefore early in architectural programming I propose to consider establishing an educative program for use, maintenance and operation of the facility using life cycle cost analysis approach.

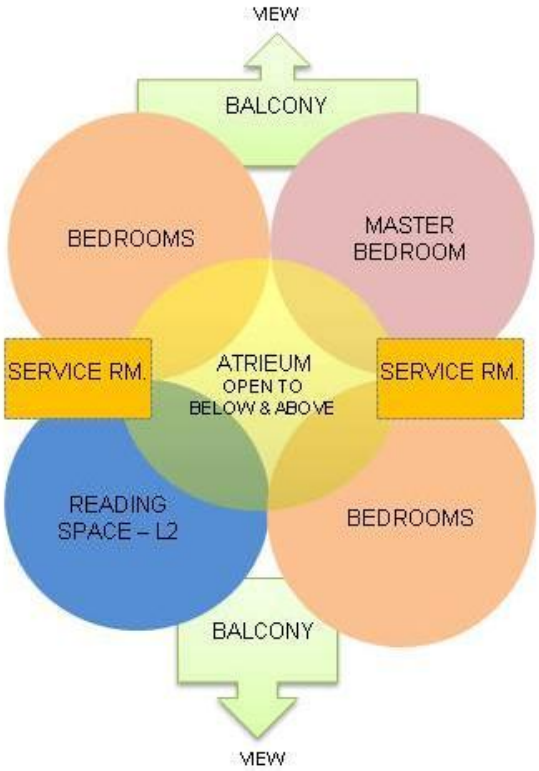
Three *diagrammatic* schemes option A, B and C has been proposed under 6,000 sf maximum including 2,000 sf for library each story 1,000 sf.



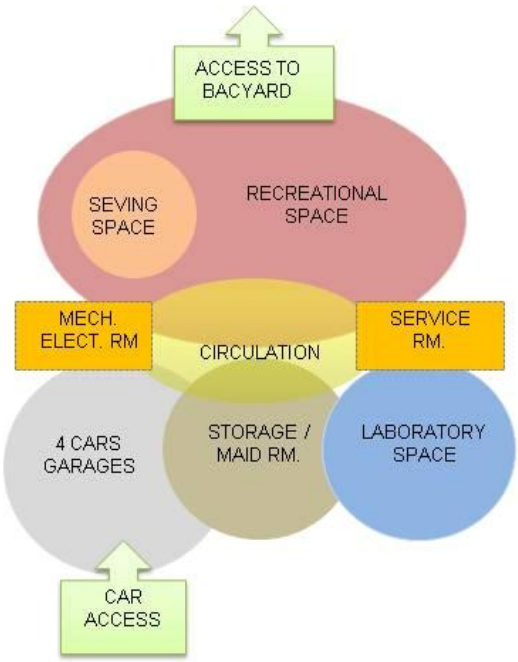
BASEMENT LEVEL DIAGRAM – OPTION "A"



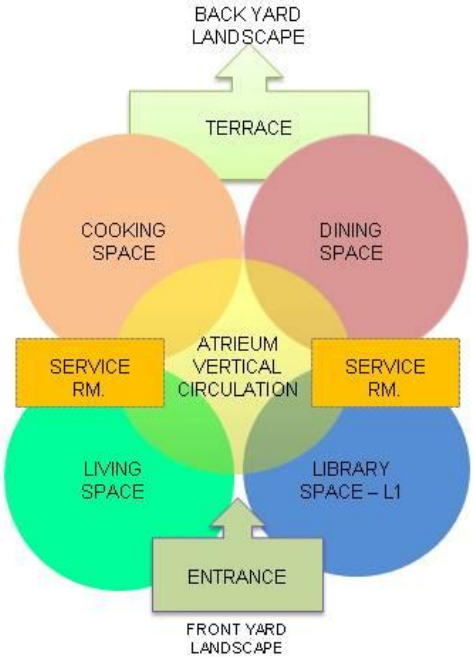
GROUND LEVEL DIAGRAM– OPTION "A"



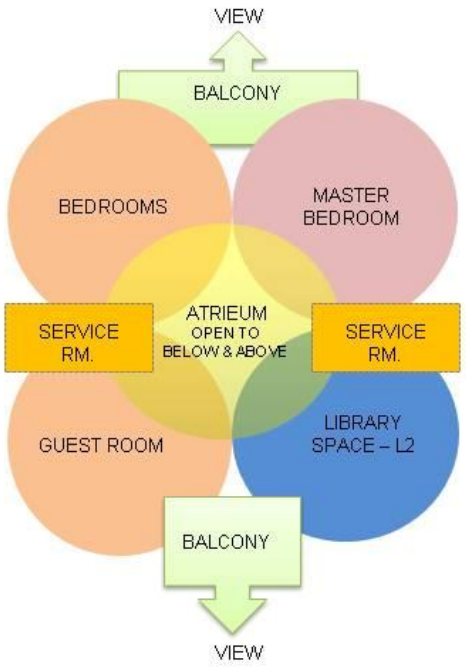
ABOVE GROUND LEVEL DIAGRAM– OPTION "A"



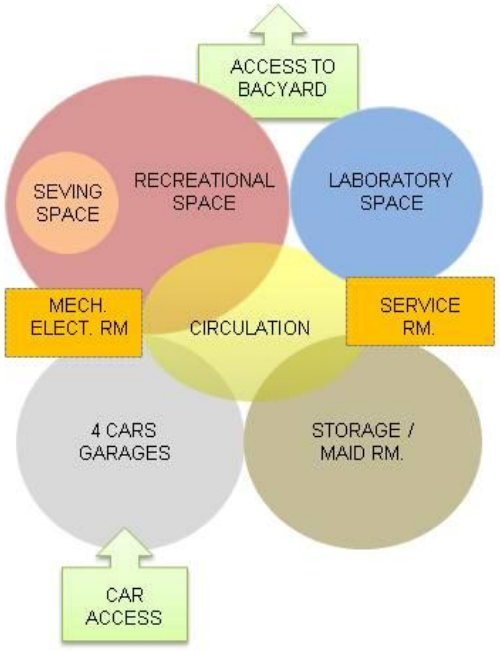
BASEMENT LEVEL DIAGRAM – OPTION "B"



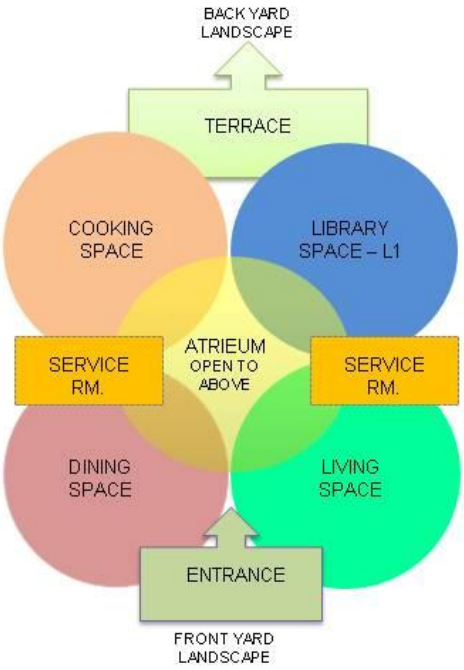
GROUND LEVEL DIAGRAM - OPTION "B"



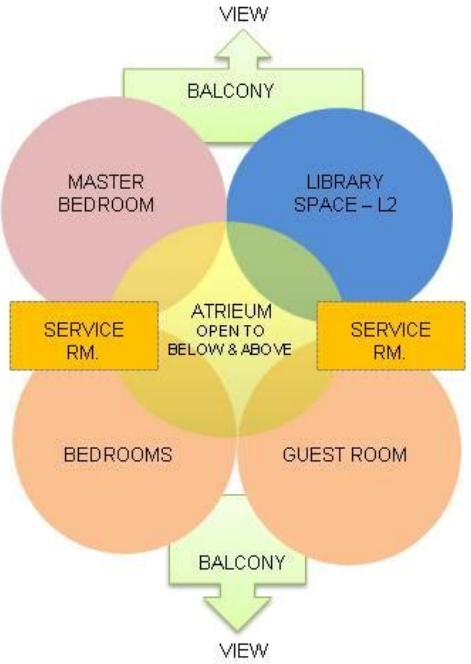
ABOVE GROUND LEVEL DIAGRAM - OPTION "B"



BASEMENT LEVEL DIAGRAM – OPTION "C"



GROUND LEVEL DIAGRAM - OPTION "C"



ABOVE GROUND LEVEL DIAGRAM - OPTION "C"