



SHADE SAILS FOR SCHOOLS

In 2002 the Centers for Disease Control and Prevention (CDC) in the USA, published the guidelines for school programs to prevent skin cancer. This outlines the steps schools and their communities could take to significantly reduce the risk of skin cancer amongst their students, teachers, staff and visitors.

The study was very comprehensive providing information ranging from giving out questionnaires to gather as much information about the schools climate and environment through to establishing the advantages and disadvantages of various different solutions to try to eliminate the problem of overexposure.

Why should schools care about skin cancer?

Skin cancer is the most commonly diagnosed type of cancer in the world, yet ironically it is perhaps the most preventable. Melanoma and non-melanoma cancers account for as much as **50%** of the worlds recorded cancer cases. Of those reported cases only about **5%** are Melanoma yet that small percentage accounts for as much as **79%** of all *skin cancer fatalities*. **68-90%** of all melanomas result from exposure to **Ultraviolet Radiation(UVR)** mainly from direct and indirect UV rays, or strong sunlight and glare.

What Is UVR?

Ultra Violet radiation is the invisible component of the full spectrum of electromagnetic radiation emitted by the sun (sunlight). The other end of the spectrum of light includes visible light and infrared radiation which we feel as heat but is also invisible. **UVR**, has many benefits as it aids photosynthesis, warms the earth and is essential to existence on earth. However given in excess it can have the very opposite effect, causing erosion, illness and global warming to a negative extreme. **UVR** levels are now rated in a simple scale of risk to exposure from 0-15 similar to the SPF(Sun Protection Factor) you find on most brands of sunscreen creams. 0 being the lowest 11+ being extreme, **UVR** levels are now commonly included in most weather forecasts. Cyprus has a yearly average **UVR** factor of **9.6** (High Risk)

The findings of this study gave useful solutions to counter the risks of over exposure school populations outlining the advantages and disadvantages for each suggestion, the most obvious and practical being to provide adequate **shaded** areas in the school premises. A well thought out shade plan can significantly change the affect of both direct and indirect sunlight thus reducing the risk of sun related illness.

Why Shade?

There are many reasons a school may want to improve its environment, not only for reasons of aesthetics but also because the very nature of educational facilities worldwide is to engage in activities that are both classroom related and extra curricular. Most schools operate their curriculum during hours of the day when the sun is at its most potent between **10am - 4pm**.

What Are The Benefits Of Shade?

Extending The Classroom. Schools are always looking for ways to extend the classroom both physically and to bring its students an alternative to the walls and chalkboard encouraging new attitudes towards learning. Modern technologies such as air conditioning and artificial light make it all too easy to avoid the outdoors; further medical studies have showed that extended periods indoors can have adverse effects on people's health, physically and mentally. Considering the above to combine a good balance of outdoor & indoor activities, is what most should strive for.

Extended Periods Of Physical Activity. Though it is not really necessary to explain the benefits of physical activities, it should be noted that continuous exercise in a hot climate such as ours can be severely restricted and therefore performance is greatly reduced whilst risk of illness and injury are increased, again balance is required. Providing adequate shade can reduce the temperature of a person doing continuous and rigorous exercise by as much as **10-20** degrees Celsius.

School Ground Aesthetics. This is a sore point for many a modern school, where budgets are often small and materials and maintenance account for large percentages of the schools total income. How the school looks will often have a huge impact on the students, teachers and visitors. Making the school environment *practical, functional* and **attractive** can often make all the difference in how the community as a whole views the school's population and standard

Strategies for Providing Shade

There are a number of creative ways to provide shade cover both using **natural** coverage (trees and foliage) and **artificial** (solid roofing and synthetic materials). Both have the same goal, and both have their advantages and disadvantages. It is ultimately up to the school community to decide which options suit their needs best. It is recommended that the school employs a specialist or specialist team to assist in planning and ensure the best results when incorporating any functional shade provisions to their premises.

Solid Roof Structures would be the most obvious solution to get the maximum protection from all the elements as they provide all weather protection, additional classroom space, flexibility of design and long life span. However the negative aspects can be complicated, from requiring specialist planning, permits, high initial costs and extra utilities such as drainage and electrical provisions.

Natural Shade. Shade cover the way nature intended is always desirable, environmentally complimentary, aesthetically pleasing and great for educational purposes. However professional landscaping can be expensive, needs constant maintenance and can be seasonal. It can be impractical and can be hazardous to other buildings and people if not well observed for changes or when baring fruits and exposed to extreme weather.

Other considerations may include allergies, poisons and damage to underground plumbing and electrical cables by extensive root systems.

Shade Cloth Structures. Is a relatively new development in outdoor design only becoming popular since the development of **UV** stabilized, durable and long life polyethylene fabric. Shade cloth structures have become a preferred method of cover for outdoor environments where the goal is to cover a large area using minimal structural support. Unlike solid roof structures no special permits are required, design can be very flexible, structures are low maintenance and aesthetically they are very pleasing. They have a neutral affect on the environment and natural surrounds.

Shade cloth does have some disadvantages though. Depending largely on the quality of the fabric used, the life expectancy of the cloth is limited and the fabric will not provide **100%** protection from the elements. However the **UVR** factor and life expectancy of the fabric is often guaranteed by the supplier or installer and fabrics generally are between **70%** and **95% UV** Proof depending on color and tightness of the weave of the fabric.

As with solid roof structures, particularly in a public surround like a school, a shade cloth structure will require a specialist to design and install as it is a cable tensioned structure.

Final Note

When deciding on a form of shade cover for your premises it is important to consider all of the above information always keeping in mind that every project has its own variables, once you have decided on what form of coverage your establishment wishes to implement you may need to consult your insurer and relevant government organizations.

UV Index	Description	Media Graphic Color	Recommended Protection
0-2	No danger to the average person	Green	No or Minimal Protection Required
3-5	Little risk of harm from unprotected sun exposure	Yellow	Protection required when spending extended periods in the sun, especially if you have fair skin.
6-7	High risk of harm from unprotected sun exposure	Orange	Protection essential between 11.00am and 16.00pm. Slip, slop, slap and wrap. Cover the body with sun protective clothing and a wide-brim hat, and reduce time in the sun from two hours before to three hours after solar noon.
8-10	Very high risk of harm from unprotected sun exposure	Red	Seek shade between 11am and 4pm. Do not stay out in the sun for too long. Cover up and reapply sunscreen regularly.
11+	Extreme risk of harm from unprotected sun exposure	Violet	Take all precautions. Reschedule outdoor activities for early morning and evening; avoid the sun from two hours before to three hours after solar noon.