Preface

The rapidly changing educational milieu demands a highly competent person who advocates democracy; a person who has the knowledge, insights, ability, and skills needed to function successfully as a recognized leader in helping people identify, analyze and solve satisfactorily the problems with which they and their society are confronted. In addition, they must be able to effectively and efficiently manage multi-million dollar institutions under increasing scrutiny and demands for accountability.

One such avenue is “The Green School.” The quality of school construction and maintenance should reflect the latest information on environmental concerns because “green” is essential for using resources in a sustainable manner. The key to success in green building, maintenance, and renovation is creating a synergistic relationship where natural systems perform services for buildings and where the built environment in turn provides support and nutrients for natural systems.

Where is the new approach to environmental leadership? Why does it take so long for new ideas and concepts to get visibility? Why must a person touch all the bases before he or she can be considered qualified to head a college or university? The capital and operating investments in various systems of formal, informal, and quasi-education represent an ever-increasing percentage of GDP or total worth. Still, this enormous complex is no better than the people in it, and global education, unfortunately has no surplus of great leaders. To be effective is the job of the executive or the leader. “To effect” and “to execute” are, after all, near-synonyms. Whether she works in a business or in a hospital, in a government agency or in a labor union, in a school system, in a university or in the army, the executive is, first of all, expected to get the right things done. And this is simply because she is expected to be effective.

Yet, women and men of high effectiveness are conspicuous by their absence in education’s executive jobs. High intelligence is common enough among education administrators, yet imagination is rare. The level of knowledge tends to be high, but there seems to be little correlation between effectiveness and intelligence, imagination, or knowledge. Brilliant men and women are often strikingly ineffectual; they fail to realize that being brilliant is not by itself an achievement. They never learned that insights become effective only through hard systematic work. Intelligence, imagination, and knowledge are essential resources, but only effectiveness converts them into results. By themselves, they only set limits to what can be attained. The demands on the educational leader are changing. Today’s education leader needs to be, more than ever, a public administrator able to carry a variety of responsibilities, many of which are no longer found inside the school district.

School districts and higher education institutions across the country are building green, high-performance buildings to accommodate the needs of students, faculty, and the community. Schools and universities in the U.S. are adapting environmental sensitivity practices in school building designs and operations that will impact of environmentally sensitive policies on the health of students and staff. World-wide there
is a wide variety of green building organizations that are providing substantial information concerning the green school movement.

There is a growing body of evidence that green school grounds contribute to children’s physical, mental, and social and spiritual well-being. Green schools foster a strong sense of citizenship and leadership among the school participants and the community. A growing number of studies show that a school’s physical condition – directly affect student performance. Green schools have been shown to promote healthy students and faculty. This is important because a healthy productively learning environment creates students more able to learn and adults more able to assist the students. Some have suggested that a healthy environment promotes healthy persons in the building, reduces sick days for faculty and students, and improves teacher retention.

As energy costs rise and resources dwindle, schools and universities can greatly benefit by taking the environmentally sensitive approach to construction, renovation, and maintenance of facilities. A robust high performance building’s movement to rethink the built environment is rapidly emerging and affecting the design sustainable construction which encompasses the notion of green building. The goal of the green school building is to reduce the school’s ecological footprints, strive for a toxins-free environment, create a green and healthy space, make school environments healthier, and create financial savings.

The terminology used here to describe the new type of facilities resulting from rethinking is high performance green buildings: a green alternative to traditional building, maintenance, and renovation. Environmental climate is affected by a variety of components that are alleviated by environmentally friendly schools because they minimize environmental impact. "The Green School” concept appears logical because it is clear that both K-12 and higher education are struggling to meet the demands for increased efficiency and effectiveness that could be enhanced by the green approach. The issue of quality should take precedence over the problem of quantity in addressing the challenges of environmental accountability. The demands are increasing particularly as the government, private industry, and non-profit groups begin to exercise more fully their potential role in environmental accountability.

The authors and editors of this book propose to broaden and deepen the understanding of environmental accountability in educational organizations, and to apply this understanding to issues of form, function, and future in building and sustaining green schools. There is no illusion that environmental ecology can be all things to all educational institutions; rather, there is a sense of commitment to an environmental approach to building, maintenance, and renovation that will benefit everyone from taxpayer to student. The authors and editors intend to bring about an understanding of the increasingly diverse and detailed demands for environmental accountability which face today’s educational administrator. This book rests on a combination of research, analysis of basic knowledge, and application of this knowledge and research to the solution of a practical problem, increased quality, and accountability in education institutions by using green technology.

 Builders of future green schools must correctly interpret the immense challenges and opportunities created by societal, environment, and technology changes spreading rapidly around the world. As the globalization of the world increases, the concurrent demand for green buildings that support the livability, comfort, and security will increase exponentially. These green schools will be able to control the environment and communicate with the building users making the buildings take on some human characteristics.

Most schools are mixtures of permissiveness and constraints, planning and change, knowledge and ignorance. What really counts is the ability of educational administrators to capitalize on the one and
reduce the other. Or as Francis Bacon (n.d.) said: “A man’s nature runs either to herbs or weeds, therefore let him seasonably water the one and destroy the other.” To such a proposition is this book dedicated.

In making this book, the editors invited extensive participation from scholars, professionals, and practitioners from an international area. As a result, 40 authors, including architects, professors, school district administrators, and US government experts, contributed their chapters to the book. The authors represent five countries: Australia, China, Paraguay, Turkey, and the United States. We are very pleased to see such an exciting participation.

This book is divided into six sections. Section 1 is an “Introduction.” Section 2 is “Green School Structure.” Section 3 is “Green School and Instructional Process.” Section 4 is “Issues in Green School Leadership.” Section 5 is “Green School Finance and Operations.” Section 6 is “Looking Ahead of Green Schools.”

Section 1 starts with a chapter by Anisa Baldwin Metzger of the U.S. Green Building Council. The chapter, titled “Green School Frameworks,” describes the underlying themes within several major K-12 green school frameworks in order to better explain each framework’s purpose and interrelationship. It provides an overview of the most widely used frameworks to clarify the powerful underlying values that tie them together.

The next chapter of Section 1 was written by John Fischetti and Dana Fischetti of the University of Newcastle, Australia. The chapter, titled “The Green Schooling of America: Emerging Research on Student Learning,” explores the potential and limitations of research related to green schools and the links to student learning, teacher grades, state assessments, and children’s overall health and well-being.

Chapter 3, titled “Green School Characteristics, Sustainability, and Student Learning,” by Kenneth Tanner, contains an overview of sustainable design ideas, five of which are associated with selected green school concepts. Acknowledgement of the biophilia hypothesis is suggested as a means to enhance depth in research methods, procedures, and interpretation.

In Chapter 4, titled “Research on Green Schools and Student Performance,” Glen Earthman carefully examines all the up-to-date green school literature in an attempt to disclose the relationship between the green school environment and student achievement.

In Chapter 5, the first chapter in Section 2, Shannon Chance and Tim Cole state that well-designed buildings can foster more effective behaviors among the people who learn in and from them. Effectively designed buildings can also conserve natural resources and help replenish the natural environment. A case study of successful learning approaches developed by Virginia Beach City Public Schools is presented.

In the chapter written by Ayşe Sirel and Gökçen Firdevs Yücel, they explore the economic, ecological, and social dimensions of green schools by means of a case study of an education campus in Adana, Turkey. The chapter, titled “An Ecological Originated Design in Education Structures: A Case Study of an Education Campus in Adana, Turkey,” aims at elucidating how green schools may be effective in the conservation of future resources in architectural sustainability.

Chapter 7, titled “Green Technology for Green Schools,” is presented by Howard C. Woodard and Robert L. Orr, who claim that technology systems typically are high-energy consumers. Efforts at curbing this consumption to create an efficient technology environment require well-developed tactical and strategic plans. The authors urge school administrators to begin this journey by developing a road map for moving towards a sustainability program.

In the chapter on “The Places Where Children Play,” Linda Lemasters and Andrew Greve discuss the importance of green construction and sustainability, including a close look at playgrounds from the perspectives of health, child development, and related moral issues.
In their chapter on “Environmental Considerations of Green School Grounds,” Cory Gallo and Michael Seymour provide an overview of the issues related to site selection and discussion of the most useful and relevant sustainable programming and practices for both new and existing schools. Site program and amenities are discussed in the six categories of process, play, gardens, water, habitat, and energy.

Section 3 of the book explores the impact of green school environment on the instructional process. In Chapter 10, titled “Green School Principals: Making the Connection among Student Achievement, Healthy School Environments, and Project-Based Learning,” Pamela Lemoine, Evan Mense, and Michael Richardson claim that creating a positive environment for learning is tasked to today’s green school leaders who are using authentic instruction to academically challenge students and engage them in issues that have personal or social significance.

Chapter 11 on “Green Schools as Teaching Tools” is written by Charles Carrick and Douglas Caywood. The purpose of the chapter is to provide an overview of selected aspects of the green school effort that have contributed to student learning. The authors also identify resources and strategies for using green schools as teaching tools.

In Chapter 12, titled “The School Walls Teach: Student Involvement in the Green School,” Thomas DeVere Wolsey draws on the extant literature and interviews with green school experts as they relate to how students become involved with and learn from the features of the school facility.

Chapter 13, “Green Teaching and Learning in Schools,” addresses the importance of shaping the school’s teaching and learning culture to exert a powerful influence on students in regard to environmental conservation. The authors, Jack Blendinger, Leigh Ann Hailey, and Donna Shea, cite 19 successful and practical examples of “teaching green” in action contributed by practicing elementary and secondary school teachers.

In their chapter on “Toward a Green Curriculum: Transforming the Schoolhouse and Classroom,” Dawn Putney, Robert Morris, and Peter Sargent examine factors affecting the development of a K-12 “Green School Curriculum.” The emphasis of the chapter is on teacher planning, involvement, commitment, and insights that support an “inquiry-based” curricular design.

Chapter 15 is authored by Deirdre Greer and Pam Wetherington and is on “Using Environment-Based Education to Transform the School Campus.” Recognizing that building green schools is cost prohibitive due to limited education construction budgets, the authors explore possibilities for transforming existing schools to be more environmentally friendly and engage students in authentic projects that could extend environmental awareness from the school to home and community.

In Chapter 16, titled “Cyberlearning in Green Schools: Instruction to the Maximum,” Pam Wetherington, Michael Richardson, and Thomas McCormick focus on cyberlearning as a green school student learning process. It creates a flexibility that is dependent on learning needs, motivations, and contexts where students can use mobile devices for personalized learning anytime and anywhere. This “green” school learning process could be entirely paperless.

Section 4 of the book deals with issues relating to green school leadership. In Chapter 17, Tak C. Chan, Robin Saunders, and Laura Lashley examine recent research data that indicates insufficient school district leadership participation in the green school movement. Strategies for green school project implementation and ways to conduct project evaluation are also recommended in this chapter.

The school superintendent’s perspective of the green school movement is the focus of Chapter 18 co-authored by Maggie Shook and Michael Richardson. It displays superintendents’ full support for green schools that create a healthy environment conducive to learning while saving energy and educational resources.
In Chapter 19, Dalphne Griffin and Tak C. Chan examine the effort of a progressive school district toward advocating for the green school initiative. The school district’s employment of the Planning, Programming, Budgeting, and Evaluation System to implementing green school concepts is reviewed in the areas of new school construction, existing school renovations, school operational practices, and curriculum integration.

In Chapter 20, Robert Waller and Elaine Artman update concerns about legal issues for green schools. They explain the legal guidelines and legislation that direct green school design, green operations, connection between environment and cognitive functioning, and equity issues.

All the chapters in Section 5 are related to green school finance and operation. Chapter 21, the first chapter in this section, focuses on the sustainability of financing green schools in a time of economic challenge. The authors, Kenneth Lane, Suzanne Harris, and Evan Mense, claim that accessing the funds to build green schools can be a daunting task for any school leader, but creating a culture that values sustainability practices and casting a vision for environmentally sustainable policies can develop a culture that values green schools.

Chapter 22 highlights the cost analysis of green school initiatives. Co-authored by Thomas McCormack, Pamela Lemoine, and Deirdre Greer, the chapter presents a clear, concise cost analysis based on common green school practices. Educational planners will be able to use this information in the decision-making process for future school construction initiatives.

In Chapter 23, Pamela Lemoine, Howard Woodard, and Michael Richardson write on the investment returns of green school initiatives. They make it clear that it is possible to measure a return on green school investment in what is known as the bottom line: social, human, and environmental capital.

In the chapter exploring the benefits of green school initiatives, Robert Waller describes all the benefits of the green school movement by using university research and industrial programs to investigate the applicability of sustainable and green construction practices within public education and reported return measures within the corporate and education Green Movement.

In his chapter addressing green school safety, Robert Waller provides an overview of various safety challenges that have had an impact on the safety of air quality in schools. Suggestions are provided to help administrators move conventionally constructed schools closer to green safe spaces for students, staff, and teachers.

The last section of the book is intended to look ahead to the future of the green school movement. In Chapter 26, Ting Wang recommends a model of developing green schools by integrating sustainability into school practices. The core of the model is student awareness of environmental protection.

The last chapter of this book is written by Rachel Gutter on “The Future of Green Schools.” She emphasized that the vision of green schools for every child is compelling: bright, clean, inspiring spaces for students, where each feels valued by his or her community, and where ongoing learning is part of the fabric of the environment. More work will be needed to lay the foundation for public demand to grow and continue to affect school environments across the country.

Having reviewed and selected these 27 chapters for inclusion in this green school book, the editors are very excited about the substantial contents of these chapters and the overall impressive outcomes of the book. The editors would like to summarize our reflective thoughts in the following:

First, the opinions of the many national and international “green” experts have confirmed our belief that keeping our environment green is the key to a clean earth for our next generation. We need to call attention to all world citizens to stop all pollution activities that will lead to self-destruction.
Second, we firmly believe that the school can play a significant role in fostering the development of green initiative in school and community. Schools can be an excellent role model for community members to follow.

Third, school districts can initiate their green school effort by building new green schools, renovating existing schools to incorporate green elements, operating their schools with green practices, integrating greenness into school curriculum and collaborating with other community agencies to enforce the development of green initiatives.

Fourth, any green school project needs to come with an assessment component to include formative and summative phases. Any effective outcome of efficiency and effectiveness as a result of implementing green school ideas will provide strong and convincing evidence for others to follow.

Fifth, school leadership is the key to the success of the green school movement. The school board, the superintendent, and all school administrators need to develop green school policies to be implemented in the school district. “Greenness” has to be a component of the school strategic plan to be effectively and sustainably implemented.

We hope that the publication of this book on green school will help bring parents, teachers, educational administrators, designers, community leaders, and government agencies to the same platform and share a common topic of international significance. After having participated in the activities of the green school movement, we can proudly say to our next generations that we leave them a legacy that sustains.

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