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AUTHOR	Lackney, Jeffery A.; Fielding, Randall; Magney, Tammy; Menzel, Richard
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ABSTRACT

Planners are increasingly focusing on the future of society, education, and the impact these social forces may have on school facilities and learning environments. This report examines patterns in societal trends, educational approaches, and facility design. Both historical trends and cutting edge approaches were explored. Participants worked in teams to answer questions and develop projections for educational and facility responses in the year 2025. The structure of the workshop followed closely Alvin Toffler's "The Third Wave," in which he articulates three waves of societial change corresponding to the development and rise of the agricultural, industrial and information societies. The following time frames are discussed: Agricultural Society (1650-1849); Industrial Society (1850-1949); Information Society (1940-1999); and Knowledge Society (2000-2025). Workshop participants were challenged with the task of speculating about the outlines of the present cultural transformation and pondering the influcence this transformation may have on education and facilities. The workshop focused primarily on the North American experience. Included is a diagram of the workshop seating matrix that helped to mix participants into groups. (GR)

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Changing Patterns in Educational Facilities

An REFP Workshop conducted at the CEFPI 1998 Vancouver Conference page 1 of 5

Summary by Jeffery A. Lackney

Workshop Presentation Team: Randall Fielding, R.A., Jeffery A. Lackney, R.A., Ph.D., Tammy Magney, A.I.A., R.E.F.P., Richard Menzel, Ed.D.

Introduction:

With the millennium less than a year away, many planners today are focusing on the future of society, education and the impact these social forces might have on school facilities and learning environments generally. This workshop's central focus was to identify and discuss these trends in some detail with members of CEFPI in a three-hour workshop setting. This workshop explored patterns in **societal trends, educational approaches** and **facility design**. Both historical trends and cutting edge approaches were explored. Participants worked in teams to answer questions and develop projections for educational and facility responses in the year 2025. The structure of the workshop followed closely Alvin Toffler's book, "The Third Wave" in which he articulates three waves of societal change corresponding to the development and rise of the agricultural, industrial and information societies. Workshop participants were challenged with the task of speculating about the outlines of the present cultural transformation and pondering the influence this transformation may have on education and facilities. It should also be noted that the workshop focused primarily on the North American experience and North American expectations for the future.

TIMELINE SUMMARY OF CHANGING PATTERNS

WAVE (North American Cultural Experience) **OVERARCHING PATTERNS**	AGRICULTURAL SOCIETY First Wave (1650-1849) **"THE VILLAGE"**	INDUSTRIAL SOCIETY Second Wave (1850-1949) **"THE FACTORY"**	INFORMATION SOCIETY Third Wave (1950-1999) **"THE COMPUTER"**	KNOWLEDGE SOCIETY The Next Wave? (2000-2025) **"THE AGE OF IMAGINATION"? "THE NEURAL NET"?**
SOCIETAL PATTERNS	Homogeneity Holistic Decentralized Informal Autonomy Egalitarian/Autocratic	Institutionalization Centralization Standardization Bureaucratic Hierarchy Conformity Mechanization Specialization	Decentralization De-Institutionalization Pluralism Customization Personalization Heterogeneity Networks & Connections	Coalitions Global Socialization Polarization Sustainability Instant Communication Virtual Community Networks
EDUCATIONAL APPROACHES THAT RESPOND TO SOCIETAL PATTERNS	Natural multi-age groupings	Horace Mann & Common School Movement Maria Montessori Waldorf Dewey/Progressive Movement Carnegie Units	Individually-based learning (60s) Middle School Philosophy (60s) Inclusion (70s-80s) Back to Basics (80s) Standards-based Education Movement	Interdisciplinary Instruction Integrated curriculum Community of learners Self-directed, project-based,

			(90s)	problem-based learning Studio learning model
EDUCATIONAL FACILITY RESPONSES TO CHANGING EDUCATIONAL APPROACHES	Home Schooling Church as learning environment One-room Schoolhouse	Lancasterian School Common School Factory Model/Egg Crate Schools	Open Schools Community Learning Centers Magnet Schools Alternative Learning Centers House Plans Self-directed Learning Environments	Virtual schools and Distance Learning Centers Networks of learning settings Learning communities Life-long learning facilities Home-schooling

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Changing Patterns in Educational Facilities

AGRICULTURAL SOCIETY (1650-1849)

First Wave Societal Patterns

Before the first wave most people in the Americas lived in small migrating groups that foraged, hunted and herded. The First Wave began with the invention of agriculture as many as 10,000 years ago taking thousands of years to evolve. The First Wave society consisted of village settlements where land was cultivated for agricultural purposes. Land was also the primary basis for the economy, life, culture, family structure and politics. In the US, until 1750, the first settlers out of necessity adopted a First Wave culture. Jeffersonian democracy was based on assumptions regarding agrarian, egalitarian agricultural society. First Wave settlers quickly pushed westward depositing subsistence farms and agricultural villages and dispossessing the indigenous populations further into the interior of the continent and eventually to the Pacific Ocean.

The economy was decentralized and local based. Politically, the village was typically under the control of a single authoritarian or a small group of social elite. Community life was organized around the social support of the village settlement pattern of semi-isolated communities. Houses were typically grouped around a central public meeting space containing public structures such as the church acting as a meeting hall and sometimes a school.

Image right: Portion of painting by Winslow Homer, used under licensing agreement, Arttoday

The agricultural family replaced the tribal structure of small migrating groups. Agricultural life required that the family structure was multi-generational and extended. Work life and home life were intermingled. Work was performed in fields or the home with the entire household toiling together as an economic unit. The imperative of group survival required an individual's personal needs to come second to the group. The agricultural lifestyle relied primarily on renewable resources that existed around the village settlement. Trees provided the necessary source of fuel for heating, cooking and comfort. Animals and people provided the

power required to transform the land. People rarely left the confines of their own village. When they did, they were limited to walking by foot or horse and wagon, or rarely by boat.

Communications in the First Wave could be described as face-to-face. Illiteracy was high among First Wave peoples with the spoken word being relied upon for day to day communication and oral traditions kept the collective memory of the community alive. Even as the written word was available at this time, many people relied on others to read aloud the material to benefit the whole community. Postal services were developed in Europe for the wealthy and powerful providing them with a communications monopoly. Attempts to send letters by other means were looked upon with suspicion and even forbidden by authorities.

Educational Approaches during the First Wave

Education during this period could be characterized by two words – survival and informal. The most informal process occurred in the farm families where children needed to contribute labor in order for the family to survive. The necessary skills and knowledge were learned from parents and older siblings as the child participated in the work of the family. Through apprenticeships, craftsmen and tradesmen would pass on their skills and knowledge of their trade to the next generation. While the young person's learning occurred in an informal setting, there was a formal structure through which the young person progressed from novice to apprentice to skilled craftsman.

The most formal structure involved the academy and university. The establishment of such colleges as Harvard College in 1636 and William and Mary in 1688 illustrates again the overlapping nature of societal waves of change. These opportunities were reserved for the elite and, to some degree perpetuated the survival of the elite in the classist society. Formal educational systems were essentially non-existent during this period. The need for literacy in the village, however, focused almost entirely on the need to read and understand the Bible so one's soul would be saved. As this period progressed, democracy began to require an informed citizenry so literacy became a necessity in order for members to be able to debate and vote on particular issues. However, elitism still prevailed with men and property owners being the only members having access.

First Wave Facility Responses

This period is often portrayed as the time of the one-room schoolhouse. However, during the agricultural period, having a specialized structure in a village or town dedicated to schooling was rare until the early 19th century. As early as the mid-17th century several Latin grammar schools and universities were established in the Northeast, however, most education for the masses took place in the home with the guidance of parents and special tutors or in the shops of craftsmen as apprentices. In the 18th century common schools for the working class developed as well as church schools for the poor.

The one-room schoolhouse nevertheless best characterizes the typical First Wave educational facility. The school was multi-aged by necessity due to the relatively small size of the village community. One teacher would preside over teaching to this multi-aged group. Learning was by rote but self-paced depending on the developmental level of the student. One-room schools often had very simple furnishings, poor ventilation, and relied on oil lamps for light and wood burning stoves for heat. Larger schoolhouses that formed in more urban areas of

the country were variations on the theme of the one-room school house often containing two, four or six self-contained rooms, often with their own entrances.

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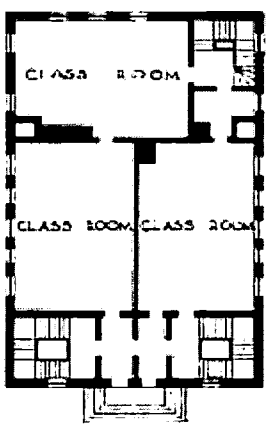
INDUSTRIAL SOCIETY (1850-1949) page 3 of 5

Second Wave Societal Trends

The Second Wave of civilization can be seen as emerging over the past 300 years and becoming dominant with the advent of the industrial revolution. Economic and social tensions between the First and Second Wave societies may be an explanation for the Civil War in 1861according to Toffler. The Civil War was a war over who would rule the new continent – farmers or industrialists, agricultural or industrial society. As 1865 came to a close it became clear that the US was on its way to becoming a Second Wave society. On the heels of the farmer were the industrialists, the agents of the Second Wave – the Industrial Society – who brought with them railroads, factories and cities. By 1850, the northeast US industry was producing firearms, watches, farm implements, textiles, sewing machines, while the rest of the country was living in the First Wave.

Although today the Industrial Society personifies oppression, dreariness and psychological repression, at the time this period was seen by many as a time of fantastic extensions of human hope. Many believed that poverty, hunger, disease and tyranny might be overthrown. Utopian writers of this period saw the potential for peace, harmony, equality and opportunity.

The integration of the market economy, the technology of mechanization and the rise of the corporation provided drivers that fueled the Second Wave. The corporation, the Immortal Being, was a legal entity that could outlive its inventors and not owned by family, individual or partnership. The corporation was a new organizational form that could pool large amounts of capital needed for industrial projects. Production shifted from the farm to the factory and accelerated. Higher levels of interdependency required collective efforts, highly specialized division of labor, coordination and integration of many different skills from unskilled to an industrial caste system of technicians, secretaries and clerks. Correspondingly, in the public sector, an abrupt shift from autocracies and monarchies to highly centralized, hierarchical bureaucracies based outwardly on representative democracy but influenced by powerfully organized special interest groups.



Alabama School, Cleveland, 1850's

Populations shifted from rural to urban, from village to city. In the First Wave only 2% of the population was urban, in the Second Wave as many as 75% of the

Alabama & Giddings School illustrations used by permission of C. William Brubaker, Perkins & Will & McGraw-Hill, from the book "Planning & Designing Schools." about the book

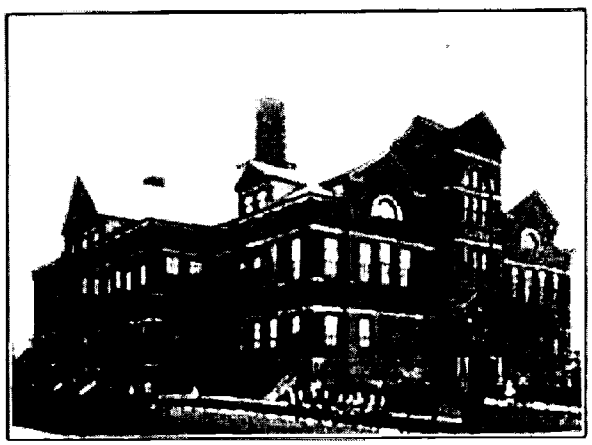
US population were urban, while the rest of the world was 40% urban. Urban life provided a forum for balancing private interests against public good, created a powerful school of social learning, and created a common ground for meeting strangers while at the same time creating alienation, anonymity and a lack of consensus on values experienced in the village.

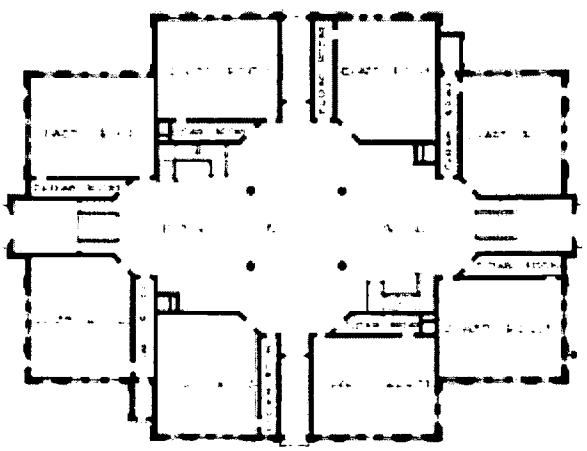
The nuclear family replaced the extended family based on economic and social pressures. Procreation needs decreased as a result of raised health standards and the lack of need for extra farm hands. Work was now taking place in other settings creating a work/home split. The rise of social institutions to standardize and centralize the care of the population segregated the entire society: the young in schools, the elderly in nursing homes, the sick in hospitals, the social deviants in prisons, and the workers in offices and factories.

Energy sources are quickly concentrated and centralized in the hands of a few large public utilities. Mass-transit created a highly mobile population that moved quickly from the isolated villages to the cities. The postal service was the first institutional framework to send messages to a mass audience. It broke the communications monopoly long held by the elite. Mass media became an image factory.

Educational Approaches during the Second Wave

Factories created to produce things led to factories to produce learning. The Common School, created by Horace Mann, in which all children could learn to read, write, and use numbers was developed for the purpose of saving the soul and working in the factories. Compliance and conformity were primary goals of these school programs. In the United States, the Second Wave gave rise to the public education system as we know it today; highly formalized, hierarchical structure designed to sort students who are eligible for promotion to a higher level in the system from those who are not. Agrarian immigration from Ireland and Southern Europe created the need for Catholic schools and the formation of a private Catholic school system as an alternative to the Protestant public school system.





Giddings School, Cleveland, 1880's

The overt curriculum of reading, writing, arithmetic and history was overlaid on a covert curriculum of punctuality, obedience, rote and repetitive work. Formal compulsory education started younger and younger and for longer lengths of time. The goal of the educational system was an overt attempt to prepare students for the workplace. The School-to-Work Program is the best example of a Second Wave educational program operating today. In this context, arguments for year-round

schools and summer enrichment programs could be seen as Second Wave initiatives. Arguments for summer school programs emphasized that children are not used in the fields anymore, a First Wave activity. In addition, having students in structured activities year-round benefits two-parent working families; the family structure presently idealized in a Second Wave society.

Standardization in educational programs closely follows Second Wave societal principles. Psychological testing (IQ) is introduced during this period. Based on work done in France for the purpose of military use, these tests are adapted for use in school placement. Compartmentalized learning becomes prevalent in the Second Wave and fits well into the factory model approach in the economic sector. The G.I. bill provided increased assess to college for millions of Americans with the college degree becoming the symbol of success.

During this period, a new universal purpose of education was formulated that focused on the enhancement of the individual. Maria Montessori developed her program for the poorest of the poor children in Italy. Carnegie Units were developed as a way to count credits and give access for college entrance to more people. John Dewey launched his progressive movement based on the assumption that all children could learn if they were immersed in active learning environments.

Second Wave Facility Responses

During the Second Wave one-room schoolhouses still proliferate throughout the rural countryside. However, very quickly there is a pressing need for larger structures to house the large numbers of children entering urban areas while their parents enter factories. Many of these early structures simply replicate the one-room schoolhouse model into what we now commonly refer to as the factory model school building – a double loaded corridor with self-contained classrooms lined up like a large egg-crate. Here was the response to the needs of the educational system known as the Common School.

Starting in the mid-19th century, urban schools could be found on tight sites of less than ¼ acre with no landscaping. Students were segregated by age into a graded organization. As many as 100 students might be housed in one classroom. The classroom, other than corridor spaces, was often the only type of space in the school. Multiple levels consisted of stacking one-room schoolhouses on top of each other. Most schools were constructed of masonry and wood frames with brick walls and pitched roofs and towers. The average class size was around 55, with desks often bolted to floors in row and column arrangements. These characteristics of the schoolhouse were the most common into the first half of the 20th century.

Toward the end of the 19th century, school buildings began to be designed and constructed with other functional considerations. Hallways were widened to accommodate increased traffic flows, auditoriums were built to support whole-school events, administrative offices included and cloak rooms were added to classroom layouts. Expanded offerings in art and science begin to dictate the development of specialty classrooms.

During the first quarter of the 20th century, sites were set aside for school facilities increased in size along with the buildings themselves. Buildings designed to specialize in the housing of junior high school and high school educational programs were constructed, and many more types of auxiliary spaces were added. Auditoriums, laboratories, art studios, gymnasiums for physical education, and home arts spaces were routinely added to the educational building program.

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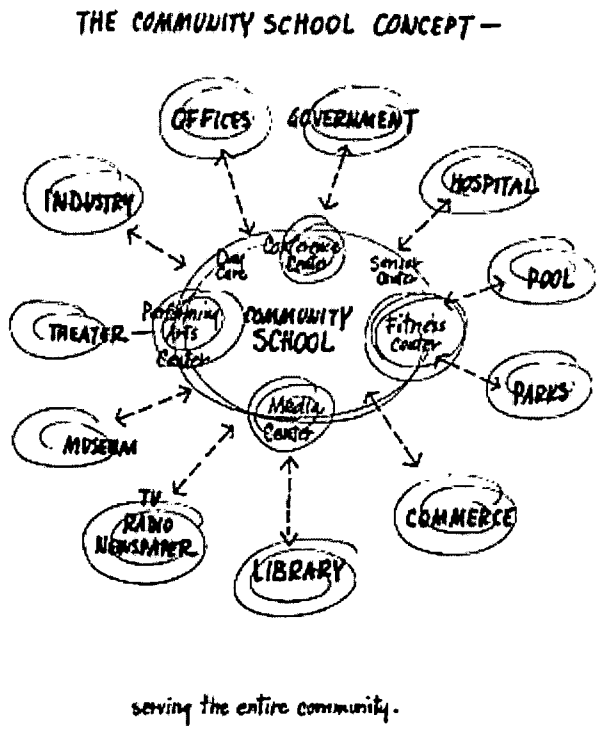
Third Wave Societal Trends

Many names have been given to the Third Wave: post-industrial, information society, post-modern society, and knowledge society. What most authors agree is that the Third Wave represents an entirely new cultural paradigm that is still emerging and unfolding as we enter the next millennium. Our society is arguably in a period of great cultural transformation from the industrial factory model to a new dynamic socio-cultural form yet to be fully dominant. Change seems the only constant during this period and is once again experienced as a clashing of waves, this time between the Second and Third.

The dominant icon or core pattern of the Third Wave is arguably the modern computer. However, Toffler suggests that the Third Wave can best be marked not by the development of the modern computer (Mark I, Howard Aiken, US, 1944) but rather by the decade that witnessed white-collar and service workers outnumber blue-collar workers for the first time (1955). Workers in Third Wave knowledge professions outnumbered workers in Second Wave industrial jobs.

The information society requires a global economy with unpredictable, accelerated, differentiated, diverse and miniaturized markets. An economy based on new industries such as electronics, molecular biology, oceanography, ecology, space sciences, computer science and telecommunications. Corporations are more fluid, transnational, team-oriented, downsized and flatter, customer-, quality- and service-oriented, knowledge driven and entrepreneurial. The manufacturing process is based on customization, short batch production and quality principles. The industrial caste system is breaking down to include employees as part-time and flextime.



Sketch above
Bill Brubaker

The nation state, that political mechanism of the industrial society, is being challenged by independently acting transnational corporations and international organizations like OPEC and the Common Market on the one hand, and ethnic regionalism and secessionists and special interests groups of all kinds on the other.

Community is getting smaller and larger at the same time. People want to spend more time in their home communities while at the same time be able to travel globally and virtually. Travel and telecommunications has created a desire on the part of many people to accommodate diverse cultures, locally as well as

globally - accepting and celebrating diversity. The definition of the family is changing with only 7% of all families living in the nuclear family arrangements in the US today, and 20% living alone. Household types include as many as 86 different combinations of adults exist in the US today. Family life and work life are reintegrating as more people telecommute. The home centered society can be seen as having a positive impact on community life: a stable community, return of face-to-face communication in neighborhoods and reduced energy consumption. The information age allows individuals to emerge from the cogs of the machine to express themselves with mottoes like just do it and have it your way. The Third Wave is an age of individualism.

Energy sources are beginning to move away from the Second Wave's reliance on non-renewable resources to renewable resources, recycling and conservation, and the emphasis on long-term sustainability. Finally, the key pattern for communications during the Third Wave is virtuality. Demassification of media and the warehouse of images from the image factories of CBS and NBC have begun with competitive cable and telecommunication systems.

Photo right: concept generated at Vancouver workshop

Educational Approaches

Educational approaches to accommodate the Third Wave are still not evident. American education's response to these societal changes can be characterized as a series of tweaks to the conventional system – the Second Wave.

Key educational reform movements in the 1960s centered on curriculum and instruction and introduced open education, individualized instruction, the middle school model, and other initiatives that were quickly rejected in favor of the more traditional Second Wave model. Walls go up in the open space classroom; flexible modular schedules revert to 6 and 7 period days; educators continue to debate new and different approaches always in an "either/or" context. One columnist sums it all up in the following observation: "place a 19th century teacher in a 20th century classroom and she will feel right at home".

The movement in the 1990s toward multi-age and various alternative learner groupings, cooperative learning strategies, integrated curriculum and interdisciplinary instruction, much of which theoretically fits a Third Wave paradigm has only started to take hold in educational communities throughout the Americas and internationally.

In addition, partnerships between schools, their surrounding community

organizations and other public agencies have become more prevalent, but still not wide spread. Schools are increasingly being seen as places in the community amenable to one-stop shopping for social services such as before and after school daycare, adult literacy, parenting academies and health and employment services.

Education has become increasingly politicized. In the 1980s and early 1990s educational reforms begin to experiment with educational restructuring mirroring the corporate business world leading to such initiatives as school choice and vouchers, site-based management, increasing centralized standards, teacher accountability and reconstitution programs, and a retrenchment of teacher unions. Bottom-up reform initiatives by parent and community groups further politicize the educational setting. A global economy has made comparisons of test scores from students in different countries more important than comparisons between schools and districts in the U.S.

Facility Responses:

School building planning and design responded in a variety of ways to the conflicts evident between the Second and Third Wave educational paradigms during the second half of the 20th century. School building designs have for the most part replicated variations on the factory model school. School buildings have gotten bigger in size and population and added numerous specialized and auxiliary spaces such as media centers, resource spaces, teacher offices, and small seminar rooms.

Some facility responses have begun to form that suggest a completely new way of thinking about how learning can best be supported and nurtured in the Third Wave society. The first experiment in Third Wave design is illustrated by the development of the open plan school building during the 1960s and 1970s. In response to the open education movement that relied on a number of curriculum and instruction innovations such as individualized instruction, educational facility planners and designers created open-plan schools to accommodate these innovations. Open-plan schools featured flexible folding and movable walls, systems components and the potential for large open spaces. As larger numbers of open-plan schools were built and occupied problems became apparent immediately. Providing highly flexible and open learning settings for Second Wave teachers, accustomed to self-contained learning environments, proved to be a disaster. Many of the innovations in curriculum and instruction represented by the open education movement failed to take hold in practice resulting in facilities that did not fit the programs naturally occurring in them.

During this same period the conceptualization of the community school encouraged innovative facility responses as well. Schools were increasingly being seen as centers of their communities. Sharing school facilities with a variety of community and government organizations have been attempted, from daycare, health and social service agencies to community education programs, sports and recreation and other life-long learning activities. The degree to which schools have opened up and shared their facilities with the community has had mixed results. However, in the middle to late 1990s, with federal support the growth of what is now known as community learning centers has accelerated.

A new trend in educational facility planning has been to view whole communities as a learning laboratory for students. Learning takes place everywhere. Schools and school district administrators across the country are beginning to realize that working to improve schools includes the larger collaborative effort of working to improve their community's overall learning

ecology. Second, in order to provide students with project-based, authentic, real world learning experiences, educators are increasingly pursuing opportunities for learning outside the structured classroom that would otherwise not be possible in the classroom. Learning happens in many settings and each setting needs to be strengthened. Schools are decentralized into a network of partnerships and smaller structures.

Concerns over the developmental appropriateness of junior high school environments for pre-adolescent learners led to the development of the middle school philosophy in the 1960s. The facility response to the middle school did not take off until the mid-eighties and is now commonly referred to as the "house plan" corresponding to the middle school "family" organization. A family can consist of as few as 100 students and 4 teachers and as many as 200 students and eight teachers. The house can include anywhere from four to eight self-contained classrooms oriented toward a centralized resource center and supported with a specialized classroom, teacher offices, small seminar rooms and other support spaces.

The house plan concept is currently being applied in high school environments as an appropriate response to advances in self-directed learning and interdisciplinary instruction. The goal of keeping groupings of learners small enough to support individualized attention and cooperative learning is now seen as having developmental value throughout the K-12 learning experience.

The rapid growth in instructional and digital technologies began to create the need to rethink what we mean by school. The first crack of this Third Wave technology into Second Wave thinking began with the re-conceptualization of the library into what is commonly referred to as the instructional media center. As computer technologies rapidly miniaturize the impact they will have on facilities is unknown. Planning for self-contained classrooms has included additional space to house technological equipment, yet the advent of laptops, voice networks, video, distance learning, palm pilots, internet and wireless technologies might reverse the trend. Resource centers have increasingly been located near classrooms rather than be housed in a main computer room. Some planners debate the necessity of a computer room to begin with if technology can be just as easily dispersed throughout a facility. In addition, the ability to log on to the Internet has created a push toward virtual schools and educational programs. What impact these technological trends may have on physical learning settings is an open question.

With all the innovative facility responses that exist the reality for the majority of schools in North America, urban, suburban and rural is that of the Second Wave facility and Second Wave educational approaches.

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Photo right: Workshop participants develop an "Educational Mall" concept with a free enterprise model; spaces change around a functional core.

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Societal Trends
What will our society be like in the 21st Century?

• Integrated Chaos, Awareness Society, Instant Era, Information Age
• Politics to be ruled by group decisions and coalitions
• Economics driven by either citizen control or citizen apathy with conflicts between the local and global
• Global socialization, Local and smaller, individuals more empowered
• Economics will see increased polarization of wealth internationally, yet economies better controlled due to speed of information passed among nations
• Energy will be more expensive, conservation efforts will increase, sustainable/green solutions will develop
• Communication will be instant and everywhere, multi-media, personal and multi-dimensional
• Transportation will be increasingly multi-modal – bikes, walking, light, rail, smart highways
• Transportation will merge with communication providing greater accessibility, "Death of distance"
• Community will see an emphasis on "traditional" family roles, a smaller unit, work centers, virtual communities, shared resources and communities working together
• Family definitions will be broader and free time will increase for child rearing, less individualism
• Individuals will have access to data, have higher expectations, more recreational time, will connect with others with similar interests, more global connections as networking with others increases, action will be facilitated by technology, people will be more educated, many rethinking goals and priorities while others will be confused

Educational Approaches

• Child focused on individual potential and social skills
• More diverse delivery methods to specific learning styles
• Learning takes place everywhere
• Global curriculum
• Activity-based learning

and working
• Flexible schedules may be forced due to the global "time-zone" factor in communication
• Process learning as opposed to facts and content
• Learn to access information through research
• Strategies for life-long learning
• Melding of work, family and community in the learning process
• Home schooling
• Different school structures to accommodate home-schooling, charter schools, etc.
• Brain research findings will encourage collaboration, communication, and understanding about learning
• Families strengthened through learning together
• No more knowledge brokers since access instant to any information instant

Facility Responses
• A return conceptually and literally to the one-room schoolhouses
• Workstations
• Employee-based teaching facilities
• Fewer classrooms and teachers and more learning facilitators
• 12 month school year and extended days and the loss of traditional facilities
• Boarding school concept
• Partnerships between educational, recreational, hospital and other community center facilities
• Movement from pod-based flexible learning environments and individual/small group learning environments
• Community center as learning village that involves all levels of education
• More community spaces
• Increased reallocation of public and private zones in buildings
• Smaller facilities with enlarged grade level bases
• Classrooms will remain
• Changes in building codes will be necessary to recognize the uniqueness of instructional space
• Technologically advanced media centers
• Redefine what a classroom is to facilitate multi-age groupings, integrated curriculums, research and technology
• Designed for global learning and information access
• Remote learning sites connected electronically to an integrated core facility

Jeffery A. Lackney, R.A., Ph.D.
Director, Educational Design Institute
Assistant Professor, Educational Leadership
College of Education
Mississippi State University
P.O. Box 5365
Mississippi State, MS 39762-5365
(601) 325-1850 (601) 325-8784

(Fax)
jlackney@colled.msstate.edu

Workshop Moderators, from left to right:
Randy Fielding, Dick Menzel, Jeff Lackney, Tammy Magney

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Small Group Workshop, Random Seating Matrix

This technique is useful for mixing up participants into groups, so that everyone has the opportunity to work with different people, rather than staying with their colleagues. The process facilitates a cross-fertilization of ideas. Each set of double numbers below represents a card to be placed on tables. By choosing cards for each table from the matrix in a diagonal pattern, participants will always move to a table with new people. An example is outlined below:

Instructions: (example below includes 16 groups of 6 participants, total 96 persons)
1. Print 96 small participant cards, each with two numbers, as shown on the matrix above.
2. Print 16 larger table cards with a number 1 - 16.
3. Arrange 16 tables with 6 chairs at each table.
4. Place a table number card on each table.
5. Choose 6 cards from the matrix below in a diagonal line for each table. For example, table one might include 1,2; 2,3; 3,4; 4,5; 5,6; 6,7.
6. Place one participant card at each seat (the first # on each card is table 1, the 2nd is table 2).
7. After the first exercise, instruct each participant to move to the table with the first number.
8. After the 2nd exercise, instruct each participant to move to the table with the 2nd number on their card.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1		1, 2	1, 3	1, 4	1, 5	1, 6	1, 7	1, 8	1, 9					
2	2, 1		2, 3	2, 4	2, 5	2, 6	2, 7	2, 8	2, 9	2, 10				
3	3, 1	3, 2		3, 4	3, 5	3, 6	3, 7	3, 8	3, 9	3, 10	3, 11			
4	4, 1	4, 2	4, 3		4, 5	4, 6	4, 7	4, 8	4, 9	4, 10	4, 11	4, 12		
5	5, 1	5, 2	5, 3	5, 4		5, 6	5, 7	5, 8	5, 9	5, 10	5, 11	5, 12	5, 13	
6	6, 1	6, 2	6, 3	6, 4	6, 5		6, 7	6, 8	6, 9	6, 10	6, 11	6, 12	6, 13	6, 14
7	7, 1	7, 2	7, 3	7, 4	7, 5	7, 6								
8	8, 1	8, 2	8, 3	8, 4	8, 5	8, 6								
9	9, 1	9, 2	9, 3	9, 4	9, 5	9, 6								
10		10, 2	10, 3	10, 4	10, 5	10,6								
11			11, 3	11, 4	11, 5	11, 6								
12				12, 4	12, 5	12, 6								
13					13, 5	13, 6								
14						14, 6								

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This matrix was used at the Council of Educational Facility Planners Conference, Vancouver, BC, 10/98, "Changing Patterns in Education Facility Planning," moderated by Randy Fielding / Design Share; Tammy Magney / ATS&R; Jeff Lackney & Dick Menzel.

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Organization/Address: Design Share, 4937 Morgan Ave. So., Minneapolis, MN 55409	Telephone: 612-925-6897 / FAX: 612-922-6631
	E-Mail Address: fielding@designshare.com / Date: 3-22-99

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