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ABSTRACT

The major addresses and reports of the NCSC annual meeting are presented. The major addresses include the following--(1) The Educational Program in Relation to the School Plant and its Facilities, (2) Flexibility of the School Plant and Effective Learning, (3) The Public Image of the NCSC, (4) Influences of the School Plant on Physical Fitness, and (5) Unfinished Business. The reports presented are concerned with--(1) utilization of the school plant, (2) school lighting, (3) fallout shelters, (4) executive session of the council, (5) standing committee actions, (6) liaison actions, and (7) executive committee meeting minutes. (FS)

NATIONAL COUNCIL ON SCHOOLHOUSE CONSTRUCTION

PROCEEDINGS OF THE THIRTY-NINTH ANNUAL MEETING

Denver, Colorado

October 8 - 12, 1962

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	Mrs. Harold E. Moore

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Acknowledgments

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Floyd G. Parker, Secretary-Treasurer
National Council on Schoolhouse Construction

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THE EDUCATIONAL PROGRAM IN RELATION TO SCHOOL PLANT FACILITIES

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Superintendent of Schools
University City, Missouri

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Superintendent of Schools
Boulder, Colorado

THE EDUCATIONAL PROGRAM IN RELATION TO SCHOOL PLANT FACILITIES

ROBERT S. GILCHREST

President J. L. Taylor presided at the first session of the thirty-ninth annual meeting of the National Council on Schoolhouse Construction. Those attending the meeting were welcomed to Denver, Colorado by Byron Hansford, Commissioner of the Colorado State Department of Education; and by Kenneth E. Oberholtzer, Superintendent of Schools, Denver, Colorado. Robert M. Cochrane, who coordinated all arrangements for the visitations to Denver schools, made several announcements.

It is merely trite to say that the 1960's are challenging years in which to live. About two years ago I had my secretary type a table that I found in *Fortune*. It predicted what was going to happen in the 60's. Some of the predictions were so unbelievable to me that I took them with a grain of salt. With only a few years gone in this decade, some of them have already happened. For instance, a man was not supposed to orbit the earth and return until the mid-60's, and the use of a satellite for communication was to occur in the late 60's. I am not going to be too surprised if some of those other things which have not happened as yet do happen—a cure for cancer, accurate 90-day weather forecasts, detailed understanding of the aging process, and a man on the moon in the late 60's. It is truly an amazing age in which to live.

CHANGES IN EDUCATION

The world of education faces similar changes. I didn't dream four years ago that I would be running a school system where anyone would suggest a complete change in the method of teaching a foreign language. There is a complete revolution under way in this field. I majored in mathematics in college. This weekend I was embarrassed by my reactions to my seventh grade daughter's mathematics. It was an entirely new language. I had to send her out on an errand while I checked back through the book in order to understand how to help her.

The decisions concerning school building construction are tremendous. I asked our next president how much money would be spent on school building in 1962, and he estimated about $3½ billion. I don't suppose we

should be nearly as concerned about the amount of money spent on school building, as whether it is spent in the best way. I think we all agree that it is immoral to create school facilities that are less than the best. Important decisions are going to be made in the next several years. Let me mention four areas.

First, we are happy that the public is interested in education and is concerned about it. I doubt that we ever have had a public reading articles on education as it does now.

Second, there is a curriculum ferment. The NEA has a committee on instruction that published a little booklet on the academic subjects. There are eleven different national studies in the field of mathematics alone and the same thing can be said of other subject fields. Where money from the National Science Foundation and other sources has been invested in curriculum studies, encouraging things are happening! A coming together, a working together, of academicians and educators. We may learn how to do something which the public should have requested long ago, to work together intelligently for the good of public school education. Whether or not we can capitalize on the use of the technological developments of our time in an intelligent fashion remains to be seen.

If I were talking to the business managers, I would say the budget is a fairly true reflection of the philosophy of education of the school system. You make out the budget to let the people see in what you believe. You could say that also for school buildings. People feel that if school builders are serious they should reflect their philosophy in the best way known to them. It is not a budget for only a year: it is a building that will be used for many years.

WHO MAKES THE DECISIONS?

Who makes these curricula and building decisions? In some instances they are made by somebody from one group, and sometimes by the members of another group: architects, the school plant specialists on the state or local level, university school plant specialists, administrators, teachers, curriculum specialists, the Board of Education, and the citizens. All of these groups have a choice in the decisions on school buildings.

Now I am pessimistic. I don't think that any one of the groups has enough brain power to make sound decisions. In most situations someone from a group might offer leadership for a team approach from which fairly good decisions might flow. But I am a little frightened. It seems to me that we chase each other around on a superficial level and we may none of us involve our groups deeply enough regarding the real basis for school plans and facilities.

I used to be a curriculum worker. The Board of Education had decided that since all of its buildings were built, it now wanted a curriculum planned. Since I was the only one in the group that seemed articulate at all about curriculum they hired me as Superintendent, for good or bad. I found out that as a curriculum man, I was not even articulate about the relationships between curriculum and school buildings. I never had forced myself, or no one had forced me, to make the connection between them. There are administrators who have never really thought through the relation between school buildings and the reasons why they are built. There may be people here who have been working with the verbiage about school building and trends, and never have really had their feet on the ground.

As a result, I think there is a crying need for leadership. I am sure that you people are trying to provide it, just as we administrators are. Perhaps we can help each other out. I am going to name six different areas where I think it is touch and go whether we proceed in the right direction.

SCHOOLS FOR INSTRUCTION OR LEARNING?

First, are we building school buildings for instruction or for learning? I think that for the most part we are still in an era which views these terms as being synonomous. But to me instruction means that there is a body of knowledge or a set of skills that you are teaching somebody. Learning means that there is an individual who is developing his own thinking ability, who is stratifying his own values, who is arriving at his own conclusions in his own right, and is making use of the skills and the knowledge which mankind has discovered. I am afraid that a great deal of what we read is suggesting technological devices, and team teaching, for instructional purposes only.

I think that we can use some of these new developments for instruction, freeing the teacher for guiding learners. How much do we help youngsters to be creative in schools? How much of a chance do we give them to test out their thinking? How much at ease do we make them feel? Are they comfortable enough to ask questions?

Another trend is national testing programs and the rat race to get into the prestige colleges. I do not know if we can resist this or not. If I understand at all how learning takes place, and if I understand the values that are important to our country, I think that for an individual to develop to his utmost for democratic life, he has to be more than a repeater of facts and a user of the old in nonfunctional situations. I think we have too much of that kind of education in progress right now. I am working on an ASCD commission called "Current Curriculum Developments." In most of these new developments, the point of view is that discovery is important to children. For instance, in physics children don't only learn

what scientists have discovered in the past, but become budding scientists in their own right. You can find this same point of view not only coming from "educationists," but from academicians and sound educators alike. They all agree that learning must have excitement and discovery to it.

MENTAL DISCIPLINE OR FUNCTIONAL EDUCATION?

Are we building school buildings for mental discipline or for functional education? I have a little booklet here, "What Psychology Can We Trust?," from the Bureau of Education of Teachers' College, Columbia University. According to it, psychologists agree concerning the learning theory which has moved away from the teaching of mental discipline. In a democracy where someday we expect the participation of every citizen, it seems to me that we have to start agreeing with Will French, the now retired schoolmaster using the Russell Sage Foundation's money, that anything that's worth learning is worth learning well. For example, foreign language is becoming functional. The main criterion is to understand someone speaking that language, and be able to make yourself understood. During the period that I was a high school principal, we never thought of that. We thought of offering the foreign language because it was hard and was requested by colleges. I do not like admitting it, but I think that most of you would have to admit the same thing.

Higher education can be taught functionally, and unless it is taught that way most of us would not have anything to do with it. Swimming can not be taught functionally when you have an auditorium for a swimming pool. We must move in the direction of having the school be so related to life that the children experience that which aids them in life. Now, and in the future, we can evaluate the success of the educational program in terms of whether it functions in life.

I have a third question. Are we going to continue education for groups or are we going to promise education to individuals? Individualization of education, to me, does not mean that one always has people doing their work at school as individuals. Youngsters would often be in groups for individual development. I personally feel that the time has come for us to start doing something which we have known all along. Individuals differ so markedly that the structure of American education cannot be defended. I take my hat off to Goodlad and Anderson who wrote the little booklet on ungraded elementary schools, and to the innumerable schools throughout the country that are trying this idea out. In these ungraded schools each youngster advances at his optimum pace through the skills, so that he is continually challenged. At the same time we keep him with his peers in terms of social and physical maturity.

This individualization means many things. First, it means that we will have to give these youngsters more time to work as individuals. The secondary teacher has a long way to go. The elementary teacher is on his way. It means that as a result of this subject program, the school buildings will be used much more. Youngsters attend school during the summer. I know that your child and mine does not seem worried about how many credits he has; if he has 22 credits when he graduates from high school that is all right.

Of course, we need a laboratory approach if we are going to have learning on an individual basis. At times the child works alone, and at times he is in a discussion situation.

BALANCE IN THE SCHOOLS

The fourth point I want to mention is balance. Your chairman mentioned Russia, and its type of education. We are all sure that American education must have a uniqueness consistent with what we believe as Americans. I like to think that we know enough about human growth and development to realize that a child, intellectually, will grow best if he has a good environment from the standpoint of physical and mental health, and that he needs creative opportunity.

I hope that we will keep a balance in our program. The parents of one boy who had gone on to make the Dean's list at Harvard were pushing us to have a seven-period day in the harder subjects. Their son answered that there are two ways of learning things in high school: Take more subjects, or work harder in the subjects that you have. He pointed out that four subjects provided him with all the work that he could possibly handle. There persists some pretty superficial thinking, I believe, about how depth in intellectual education is achieved.

What are we going to do about staff utilization, the utilization of human resources?

First, I would like to emphasize that we not stop at the Trump Plan, but consider the human resources in their numerousness. There are adults and many others that would get great satisfaction in knowing more about youth education, if they could be helped to understand it. Therefore, the school should never take over what parents can do themselves. I believe that we should never offer a shop at school when we can provide more realistic facilities by cooperative arrangement with business and industry.

We have been fortunate enough to turn out an instructional project with Peabody College, and it only took one year to convince our school board that instructional secretaries ought to be provided for teachers. I sometimes wonder why we did not think of this in the 40's and 50's, but maybe some of you did.

This idea of using noncertified persons such as instructional secretaries and laboratory assistants to free the teacher is a wonderful plan for better staff utilization.

I think there is more possibility that we are going to stub our toe on team teaching than anything that I have mentioned yet, unless it is instruction versus learning.

Team teaching can be interpreted in just about as many ways as there are people. At your level, it is just the old departmentization, which existed in abundance in the secondary schools. Now on the other hand, I heard an architect say once that a teacher is the loneliest professional worker that he knows. In the typical staff the only time the teachers get together is when the principal has a meeting, and many administrators have not learned how to have a teachers' meeting. The teacher's concept often has the potential to help teachers plan cooperatively. I believe in team teaching if we can interpret it in a sound way, but it can have its pitfalls. It can help us do the right thing with the children in terms of their needs; to properly utilize teacher talents; introduce the good teacher and literally hold his hand for a little while. It can have a class style in terms of the function of this kind of teaching. If we have to lecture to three, we might as well lecture to thirty. We know that you cannot have too much discussion with the intelligent youngsters, and that independent study happens too infrequently in a typical high school classroom. This is a tremendous concept but let us be careful with it.

USE OF PHYSICAL RESOURCES

The last point I want to make concerning these different curriculum ideas deals with the physical resources. Technologically we can do just about anything we desire. Youngsters can go to Asia in the summer; there are some of them doing it right now. Instructional trips have no limits, other than the problem of money. Television can give advice and tell about an experiment. Televised programs from across the seas, or any place in the country, can bring a remote area right into the classroom. I heard an architect say that he was fed up with gadgets because they interfered with teachers. I saw a first grade teacher the other day, whom I don't think could have accomplished what she was doing without a projector. She makes tapes during the summer which she files in her room. The first graders in her class can get them, put them on the recorder, set up a table, put on the earphones, and turn on the tapes. The student hears the teacher's voice and the directions given. Audio-visual developments are successful if used correctly. We have requests for them all the time in the classroom. In discussing programmed learning I suppose that there is a real risk of showing my conservatism, but remember I held out for the self-contained classroom for years.

I heard a speaker from a leading company tell an audience of educators what you could do with a system approach in an elementary school. If you had data processing machines in the basement and the right teaching machines in each youngster's desk, you could tell from testing what each student needed. What this meant was that a person who knew how to operate the electronic equipment could run that school for 300 youngsters. He did not say this was necessary but that it was technically possible.

I still see the teacher as the central figure, utilizing television and programmed learning to do appropriate kinds of instruction. This will free the teacher to work with children on ideas, exercises, and experiences that he does not have time for now. I hope that we give these professional educators the additional tools with which to work. I predict that programmed learning is here to stay. Most of us are testing the different kinds of programmed learning which our own teachers have been learning about in the summer, and which some companies now have available.

Now what does all this mean to the plant and the facilities of the school?

Glen Ovard and his colleagues have written an article in the *American School Board Journal* on planning academic classrooms. I think that they have given us a real bench mark on which to build. I liked what they said because I think it is true. They said that the architect for secondary schools is told how many youngsters to plan for, the community interests, a good football field or stadium and a good gymnasium, and the kind of cafeteria wanted and, as an afterthought, "adequate classrooms."

These articles claimed that at the secondary level, if you are going to have independent study by youngsters and smaller group interaction, then you must have the proper space. It is not right to think about the small classroom that some of our elementary teachers are in. I suppose it is important not to make classrooms too large, and I think it is equally wrong to make them too small. We must consider our space needs, and flexibility is involved too, if we are going to have this learning taking place.

I believe that secondary youngsters should have a home base. If we believe in individualization and a youngster starting with his own goals, he must have an operating base. So I like to think that the high schools for the future will be accommodated with these academic classrooms. I expect that 95% of our secondary youngsters have two places at school close to being their own. One is the locker where their raincoats and galoshes are kept and the other is the locker in the gym. So individualization has some implications as to how many nooks and crannies there are in these subject field laboratories, and how the library is constructed.

THE COMMUNITY SCHOOL

I am fuzzier on this functional concept than I am on some of the others, but I like the idea that the school ought to be part of the community, and there are many different ways that this can be accomplished. Most of them are through human beings and are interrelated, but some of them are in the physical plan. I would like these youngsters to feel that school is not bounded by a campus, but it is the center of their learning. Do you know any departmental teacher that does not have a science table; who does not get interested when a first grader sees an unusual butterfly? Some of these things do happen. Courses are enhanced when the facilities can bring about these experiences in the best way possible.

I'd like to see if we cannot clarify the scope of our physical fitness program in the next ten years, and build our physical education facilities accordingly. I know of schools where the children, other than the athletes, do not have much chance of doing things.

What has happened to our concept of comprehensive high schools? Are we preventing them? Is art a respectable subject for the boy that is headed for M.I.T.? There are people at M.I.T. that think so. Curriculum balance has a part in school construction.

Now when it comes to staff utilization, certainly teachers need more work space than we used to build for them. We need to hammer out in each of our individual situations how work space is related to the learning situation, and how team members should be located near each other in order to collaborate more easily. I know that you have had some meetings where you have talked about this kind of thing.

I take a middle position on the idea of flexibility. I hope that we don't get so flexible that people have their spots which they don't think they know how to use. I have heard rumors that there is a school built for team teaching where there is not any team teaching. I would rather see a wall knocked out now and then, and be sure we do not build bearing walls in the wrong places. The people who are going to use the school ought to be pushed to look into the future just as far as possible, and then maybe we ought to build in terms of that, with a reasonable amount of flexibility. You can go too far in terms of somebody's vision unless he can seem efficient to other people. If people know why they are building something, and certain items have meaning, then they will make use of it. I know of public schools not too far from my home where they build schools within a school; there is something wrong in their planning. That is why I think some of us chase each other around a superficial circuit. Sometimes we build a new room, not because we need it, but because it is in style.

I am intrigued by how little time a teacher has for the instructional equipment. I guess nobody has the answer, but it is obvious that some of it has to be in the room, or in the building. I guess we have all crossed the bridge when instructional materials are just that, and we do not have to fight between the audio-visual and library.

BEAUTY OF A BUILDING

I have not touched on the point that affects education tremendously: the building and its beauty. It is a functional kind of beauty, not just a physical beauty. Amazingly, many people believe that it does not cost any more to make a school beautiful as well as academic, that there is not a relationship between beauty and the cost.

I noticed in some of Gibson's articles that he talks about special, science, visual, and formal policies in building. Well, I think that it is high time that building also adds much more flexibility. The air-conditioned office moves in that direction. We built a completely air-conditioned high school last year. If you are going to fill a building with youngsters in the summertime, it needs to be air-conditioned. When it comes along May and June, it gets pretty hot in the St. Louis area. But many people thought it was not the sound thing to do. Well, I think our public will move along if we are articulate enough about things.

I am intrigued by some of the things that you people will be talking about, such as carpeting and movable walls. We are going toward flexibility, toward having school quiet and still having the youngsters be themselves, instead of not talking to anybody because it might be noisy.

In conclusion, let me say that I think each of us owes it to himself to be pretty clear on his basic philosophy of education. I think it is hard to think it through once and be articulate. Just what do you believe?

One thing that I have decided I believe firmly is that our American way of life has the potential which is worth working for. The dream for America is that each individual develops to his greatest potential, not only through his own happiness and success but to make his maximum contribution to his fellow man, his country, and the world. What greater goals does anyone have than we in the education profession? We ought to thank the lucky stars that we have them. I am glad to see people proud of their educators, or at least I think they are.

Some values we hold tremendously important. One is that each individual is important, just because he is a human being. He has potential because he is a human being. He has the ability to think for himself, and our goal is to help him think at his highest level. In the public schools we should help mold him into his greatest self, from both the thinking and

behavior standpoints. I would like to feel that it is part of everyone's philosophy that individuals don't grow at the same rate in different skills and insights. I would like to think that we all believe that this technological age is a challenge and an opportunity, and that schools can move ahead more effectively because of it.

I would like to urge you to get people to spend all the time possible in planning, then you be the spearhead to back up the curriculum plans. There are systems across the country that still don't do much curriculum planning. You men have a wonderful opportunity at planning your own school building, to stay more independent than you were before. Take time to help people become as articulate as possible about what they want the educational program to be, and how we want to take advantage of the new developments. Spend a great deal of money on travel if necessary, not just to see some buildings, but to be absolutely clear on what we want children to be experiencing. I believe it would be easier to know what kind of facilities and school building we would need.

Many of us have our feet stuck in the mud, by tradition, or just routine, and we just can't get around to doing this kind of job. We need teachers. Can you be a teacher? Can you help the local community take a new look at its goals, and build toward these goals to reflect the level of highest aspirations for a new school?

FLEXIBILITY OF THE SCHOOL PLANT AND EFFECTIVE LEARNING

HAROLD B. GORES

Please accept my remarks in the following context. Within the last month I read a book called, *The Race to the Year 2000*, written in German and translated into English. It is a poor man's Shangri La in which the author discusses, by citing birth rates and so forth, what the world will be like in the year 2000. Will the buildings being put up in 1962 still be in service?

In the year 2000, according to the author, one-half of all mankind on this globe will be Chinese or Russian. The United States will have 5% of the world population, and Western Europe, which has the closest cultural kinship, will have about 2%. In effect, in the year 2000 the children in the American schools will represent one out of twenty on the face of this globe, and probably the United States will bear the same ratio to the world that Switzerland does today to the Western world. It is in this context that I hope you will consider my remarks, because otherwise they would appear to be bizarre.

The topic given to me was flexibility. It is a wonderful topic because it is a hot one. About three years ago a very imaginative architect stood up at the University of Michigan and said there is no such thing as flexibility. Flexibility is a sheer delusion. Well, it was good for my morale to see a building that he had designed this summer. I have never seen a place more flexible.

What brings on this drive for flexibility? Primarily because education is fluid. To quote John Lyon Reid, it is a fluid process and tends to take the shape of its container. For 100 years our education was so arranged that the containers we built fit the way we wanted to arrange the occupants. Now education is literally bursting out the walls because the container does not seem to fit in some places. This results in having to rearrange the process and the arguments.

If you go back historically, you will observe that a dynamic, convulsive change in education occurs about every 60 years. Let us go back three cycles. The 1830's were the period of Horace Mann, Henry Barnett, and the beginning of teacher education. Then things seemed to subside for the next 60 years. Now on the half-beat, every 30 years, there is a subcycle where some section of education comes under the hammer. In 1860 the American high school became rather universal and non-controversial. The 1890's were the next big cycle, with the purity fraternity unit and

the reorganization of education. This was the last decade in which the American high school did anything to change its nature until the 1950's, 60 years later.

The high schools have made the biggest change in the 1960's, from my observation. The offbeat cycle 30 years before was progressive education which began in the elementary schools, and never affected the high schools or the colleges. Occasionally you still get gurgles coming out of submarines talking about the old days when the sand pile was the major subject, but that cycle is pretty much behind us.

A NEW BATTLEGROUND

The new battleground in my judgment is the college, probably because more people are sending their children to college now and discovering how colleges are run. I would guess that those people who are in the school business are going to fall into a somewhat quiet period, while the American college is hammered the way that we were hammered in the 50's, 30's and 90's.

Now, what's happening in education that we are trying to get out of the way of? Flexibility results from the desire to get out of the way of the student. In 1938, the last year I was in the education arena as superintendent of schools, we had the good luck to have two very bright children come through our school system. When the Westinghouse Talent Search was held that year, the seventeenth in its history, we came up with both No. 1 and No. 2, the first time this had happened among the 25,000 students in the Westinghouse Talent Search. *Time* Magazine called from New York, and when you are up in New England, getting a telephone call from anyone this important is news. They said that they wanted to show the pictures of these two young people. Our question is: How did it happen that the No. 1 and No. 2 students came out of this one little school in New England? In the high school they asked the same question, but nobody knows. If we did know, I guess you could only say that we had two bright pupils *and we got out of their way.*

I thought that was the answer, but *Time* did not think so. Their article on the two children had to do with the fact that the No. 1 winner was exchanging sonnets with the No. 3 winner who was a girl from Montclare.

Again in the context of the year 2000, the self-contained classroom is breaking up. It was a sensible way to arrange children and teachers. For 100 years it served us well, but it no longer seems to be the most effective way of arranging students and teachers in a school.

Today it is the self-contained classroom in the elementary school with the teacher in the box, (25 children if you are rich, 35 if you are poor,

and 50 if you do not care), or it is a high school where you put the kids into so-called divisions. Bells ring and those divisions, never changing their composition, roll and weave their way through the school six times a day. It may be the black book secondary school arrangement, which means that in effect the 50-room high school is 50 little schools between bells. The bell rings and they concentrate in one of these schools for 45 minutes, and then they re-constitute another little school. It is clear this is breaking up, but it will be a long time before some of our big cities will move to another arrangement because of their management-communication problem.

We are moving away from this general group-ism where, by architecture and by design of the interior, we automatically sort the children. Many high school principals get home late the first day of school in September because they have been back at the end of the day opening up classes. In fact they have just so many boxes, and some of them have too many berries in them, so they even up the boxes that night.

This general business of the standard group-ism, in contrast to trying to steer the individual out of the class, is necessary. We need seminar spaces where six, eight, ten or twelve youngsters can consult and discuss the general value judgments of subjects, especially in the humanities. The student will not always have to go through the switchboard of the teacher. In the seminar you can get the play of the student mind.

THE NATURE OF TEACHERS

The nature of teachers is another reason for new requirements on the general arrangement. We talked about the individual differences of children, but we have not talked about the individual differences of teachers. The supposition is that if a person is a teacher he is therefore good. You know, and I know, that this is not always the case. Teachers' skills and their ability to communicate with their children, will fall in the same spectrum as that of doctors, lawyers or any other group. You have a box with 30 children and a teacher, and through a four-inch partition you have another box with a different teacher. One teacher is an old pro, a person that can teach children to read and love to read, and she is the best teacher in the country. Those children have her from September to June, while just four inches away is a bobby-soxer hired at the last minute. She was engaged when she arrived, she gets married in October, she is pregnant in January, she is out in March, and the substitute fills in the box in less than a year This is not equal educational opportunity. This is another pressure than tends to knock down that wall between the two groups.

The notion that we should sort children by chronological age is quite a help. Readiness is determined by confrontation and not by some course of study prescription based upon the average child finding a certain topic to be most suitable. Now we say "When is the child ready?" and whenever he is, access is given to subject matter. This helps to break up the interior of a school too. Scheduling by the clock is gradually disappearing in some spots; however, it is difficult and you can get chaos if it is not done carefully.

INSTRUCTION BY APPOINTMENT

I think the most vivid development at the moment is at Melbourne High School in Florida, where certain students receive instruction by appointment. It takes some secretary to keep track of those appointments! Some schools have almost given up trying to plan a program around individuals, so they bring in computers to keep track of people. There is no question that more and more instruction will be by appointment if the child has the motivation to make something of it. This should be approached cautiously.

The teacher as the general practitioner is disappearing and becoming a clinical team member, to use a medical analogy. The general practitioner is the typical second grade teacher who has spent 37 years in the same room. I had one such wonderful, warm, human being, who for 37 years stayed in the same room, and then we had to abandon the old school. This teacher said she was glad that she was retiring because for 37 years she had looked out the window at the maple tree with its beautiful foliage, and she did not want to leave that maple tree and that room to move into a new school.

Teachers' compensation affects the way a school is built. The notion that all teachers are of equal worth, and therefore all should get the same salary, is changing along with the role of the teacher. The merit system has been having its problems because it tries to sort people. Everyone knows that Miss A is better than Miss B, therefore you pay $1000 more to Miss A, but you cannot convince Miss B that there is a $1000 difference. Whereas Miss B was mediocre last year, next year she is also mediocre. This is not good for the pupils.

However, change the roles in a way socially acceptable to the faculty, and you can lead with your aces. Those persons who are so good in establishing rapport will teach 50 children, or 90 children under some circumstances, or 30 children or 15. This has implications for looseness in the interior environment.

THE OLDER TEACHER

There is a better way for a teacher who reaches his 60's, and whose energy is beginning to disappear, to use the wisdom he has gained. But we squeeze him in the role where he has to expend the same amount of energy right to the last day when he retires. There should be ways for our best teachers to fade out, in terms of energy demand and the teaching role they have. They should probably be moving toward the seminar, the individual relationship of the ones-and-sixes, and tens-and-twelves group. Here is a more humane way of logically assisting the teachers over a transition period in a successful career. This also puts pressure on how you design the inside of a school.

Finally, the notion that a school shall consist solely of a staff of professionals is changing too. A typical school in our generation will have the professionals plus the nonprofessionals, the aides, etc. This has an implication on school design because you will have more adult bodies in the school.

KINDS OF FLEXIBILITY

What are some of the kinds of flexibility? Well, the simplest kind is in the Dundee School in Greenwich, Connecticut, where they have two classrooms and a pull-out wall between them. This is the most primitive form of flexibility. It has no great educational significance, as I see it, except as an effort to multiply the space. The Greenwich School was designed with the possibility of return to the self-contained classroom without additional costs.

What you see more is the cluster, as used in the Belaire School in San Angelo. Frequently four classrooms are arranged in the central space and teachers are clustered into some working relationship with 120 children. So we have this tendency of getting more clustered as against the traditional arrangement, ribbon fashion down the straight bowling alley.

Then the next move is the loft plan which is becoming quite general. Take a look at Andrews, Texas if you have not seen it. John Lyon Reid's theory is that curriculum, the teachers, and the students will make their own pathways through the school, so there will be nothing to stop them from making pathways for 40 or 50 years. NYU has an interesting school in Washington Square, five stories high, with five planes of space, out of which they can snap at once the kind of spaces they want—classrooms, for example. Whether they will be able to do it I do not know, but it is an extreme notion. It will take years in which to snap out spaces rather than the reverse—create the spaces and then be able to knock them down.

Watch what the Dome School that Caudill is building in New York City will be if it is permitted. This is the self-contained cluster of 150. Here again is the great universal space, the general space with specialized equipment out of which to snap the needed sizes. This universal space is achieved by putting in shelves of some sort, with a self-supporting roof.

ACADEMIC TRAILER CAMPS

The land is blemished with chicken coops, as we call them in New England—boxes with pieces 28 feet wide and 32 feet long, and not designed with care or great attention to aesthetics but merely set around. The trailer industry began creating these boxes, and when you put ten of them in a row you do not have a school, you have an academic trailer camp. The child, once he gets inside, finds a good environment. Many of them are air-conditioned, with carpeting on the floor, new furniture, and good lights, but it is still a box. A child going into that box is going to a classroom, and a classroom is not a school. What we need is someone to design cavities which can fit together so that the architect and the schoolman can shake the space that holds together the whole thing, whether it is four classrooms or six. It is organic, it coheres, it is a single thing. When the child walks in the door, he has a feeling that he is going to school as distinguished from going to his Box No. 6 on the right.

Watch what Los Angeles is doing with respect to a permanent, immovable core in the school, plus satellite space. As I understand it, they are contemplating a high school of 2000 students. The birth rates have always been cyclic in the past, and it's presumed that they will continue to be. What you do is to make 1500 your permanent capacity. The school ought to speak out for our culture and look as though we care about youth. Let this be the place where the artistry, the aesthetics, the permanencies take place. But then draw up in some asthetically acceptable fashion the satellite space for the other 500 which can be redeployed at some future date, when the population curve has gone down, to another place in town, in the way that you deploy teachers or books.

Joint occupancy is another kind of flexibility being sought. New York City, as you know, is researching the question of combining an eight-story commercial high school with a twenty-story commercial building for a total of twenty-eight stories. Their preliminary economic feasibility study indicates that in 40 years the commercial building will have amortized the first eight stories. City and Country School in New York City is a small, independent, poor school, except for one thing. It found it was on very valuable land, so it will sell out and move across from St. Vincent's Hospital and build a structure that is part school and part medical suites. They believe that eventually the medical suite, separately sold but still part of the total complex, will eventaully amortize and pay off that section

which is to be the school. Medical suites rate very well; it is believed they are compatible with school facilities. We need more and more experiments in this joint occupancy in order that more money can go to pay the teacher.

The biggest challenge of all is in the big city. Harlem and other places in our big cities have schools that do not serve. Half of the people between 16 and 22 years of age are neither in school or employed. They are roaming the streets not attached to society at all and having no sense of belonging to it. It is clear that the city school as we know it does not work. We need a new kind of school there.

MOVABLE PARTITIONS

Well, what is the state of the art with respect to flexibility? One of the first things that comes to mind is this type of operable partition. There are about ten manufacturers, as you know, who have on the market a divisible, operable wall that purports to stop sound. That type of wall is only a visual barrier, but now they have come up with a wall which is useful if you have limits. The only way that you can beat mass wall, as I understand it, is if you also have limits. This will help you hold down the necessary weight. By the way, in a current study John Lyon Reid went into a school to examine how much acoustic privacy one could get in a school. He found that, in general, a fixed cement-block partition between two classrooms will mean about 22 decibels of sound continuation between the two. This means that acoustically many of these schools are sieves, with a tremendous acoustic leakage, far more than we ever realized. The movable partition is coming more and more into practice.

One of the best means of acoustic dampening for taking the burden off the wall and ceiling is acoustic-insulated floor covering. The only trouble is that rugs are culturally repulsive to schools at the moment because we are in a curriculum based on a race track and these kids going to school are preparing for a race.

Nobody will attack carpeting on the floor of a library because they are attacking a book, and nobody attacks books. The Andrews, Texas, school has wall-to-wall carpeting. The people are happy with the economics of the situation and convinced that they were sensible. In four and one-half years they will recover the higher original cost of installation by lower operative costs. They estimate that in ten years they will have saved enough to replace the carpeting and still have ten years' wear left. It would appear that economically they cannot lose, and in the meantime, it changes the whole tone and environment of that school. It introduces a maturity so that the youngsters act a little older and more responsible. The voice level is within reasonable modulation because the noises do not pile up one on the other. The biggest problem is the sense of cultural guilt that communities

have because, after all, how are we going to fight the Russians if we bring up our children on rugs? The whole imagery is one of lushness which is too bad. If only it were called acoustic insulated floor covering, but people insist on calling it carpeting, and I guess that is what it is.

An expert in the field of environment says that a carpeted structure should save 5% on fuel costs, particularly if it is slab-on grade. This will not apply in Maine where you start the boiler on Labor Day, and close it down in the middle of May, letting it run day and night. It is surprising to me that he says the further south you go the more savings there should be because of cross-heating. A person standing on a surface that is essentially insulated signals that he is comfortable sooner than one standing on the relative ice of a tile surface.

The general texture of materials everywhere is softening. Notice the change in the furniture, with wheels which are less hard and reverberant. In this general business of trying to get the schoolhouse out of the way we are coming around to the folded plate roof. The most bizzarre request received by the Ford Foundation was from a University president. He said: "Football does not fill our 42,000-seat stadium but we need 16,000 seats for basketball. Would it be possible to put an airplane hangar over the bowl of the stadium, giving me three walls? Could a garage-type door of the Boeing 707 hangar be utilized to create my field house?" Well, we gave them funds to work out the architectural-economic feasiblility of such a project. They have reported that it is possible. Whether they will do it or not I do not know.

INTERIOR SPACE

The other phase of flexibility that will vex everybody is the argument over interior space. The only constructive thing that I can say concerns our visit to the National Institutes of Health to see what they knew about the psychological effects on people when they could not look out the window. From their inconclusive two-year study, there are four factors which are to be taken into account.

1) How big is the place? This makes a difference in the psychological count. The bigger it is, the less desire for anyone to look out.

2) How long will the people be in this place? If they are in for a while, they do not care; long periods of time may make a difference.

3) What are they doing? The environmental psychiatrist says that if persons are heavily task-oriented, they can work without looking out the windows.

4) What about the surface? Twenty girls were put in a rectangular room with blank plaster walls, tile floor, and acoustic privacy ceiling. They lined up 20 typewriters and started the girls typing, a good task to use in measuring productivity. The girls became thirsty, and had to leave the room for a drink. Upon analyzing this situation it was decided these girls were unconsciously rejecting the blank, sterile, antiseptic box. Instantly they wanted a reason to get out of the place. No boss ever told his secretary she could not get a drink. It is socially acceptable to get a drink, or go to the toilet. So they found a socially acceptable reason to get out of the place.

The surfaces in these interior spaces should have warmth and texture and irregularity. Where you introduce the irregularity, you take off the burden of knowing what it is like outdoors. There is one school of thought that says that the window has the same relation to life as a fireplace does to heat. The fireplace today is a nice thing to have in your living room but it is essentially a decorative piece, a personal thing, and has no relation to the heat in the house.

HEATING-COOLING

Some schools are overheating. New York City paid $16,000 for a survey to find out how to cool air in their very large and expensive two-year-old secondary schools. One recommendation was to air-condition their educational greenhouse at a cost of $1 million. It is expensive to be fighting nature in this fashion.

Well, because of this problem of heating we went to a professor at Princeton. We said "Will you scout the field to see what we could do for a college in the south that has five air-conditioned buildings and an electricity bill that is running about $1,000 a week? You cannot take out the glass, the building is two years of age. You cannot go to the legislature and say 'Let's put in low-transmission glass or screen or whatever.' It needs an economical solution that will try to reduce those electricity bills." The professor tested everything on the market. I had hoped that he could invent something in an aerosol can to squirt on the inside of the window, but I guess we will have to wait till 1984 for that. He tested the skin of Echo II, the balloon that is going around the world. It is a plastic which is one percent of the thickness of a newspaper, and it costs about three cents a square foot after it is metalized. In August he used this material on the windows of some classrooms in a Princeton, New Jersey, school. Following this, comparative tests were made. By sticking this material on the inside of the rim of the glass, transparency was reduced only 20% while the heat coming through that glass was reduced 68%. The average classroom temperature was reduced about 13 degrees on the days when the hot sun beat on the south and east side of that building. We will soon have a report out on this study in the Princeton school which I know will be of interest to all of you.

EXTREME CASE OF FLEXIBILITY

The most extreme case of flexibility I know came from a monsignor who came in and said, "We are going to be building a college for 350 students. We have $3 million. I do not want to talk about dormitories (nocturnal storage). I do not want to talk about heating or exercises. I just want to create this college with $3 million exclusive of those three things. I want space, and in the afternoon or evening I do not want those spaces standing vacant. My college is going to be a library. In the afternoon, and especially in the evening, I want my whole student body to study in this great library-like space. I want every man to get the academic sweep of our institution by being able to see fellow students studying and working together." Quite a concept! You can imagine the academic drive generated in an institution like that. I do not think it hurts to see another student working; however, the space must be acoustically dampened—starting with carpeting.

Do we have a right to plan the building ahead of the faculty? Do we have to train the faculty before we give them anything that would be strange to them? When you create permissive mechanisms you may have chaos when the new faculty moves in. Whenever we build or design a school that is off-beat, we must also attach money so that the faculty gets paid for time spent in making sure this building will work. In the context of the *Year 2000* we have no alternative but to get as permissive a structure as we can. You are expected to follow the kind of education that is currently in vogue. You know it is going to change. For heavens' sake train the teachers before they go in or they will have all kinds of difficulty and so will the children.

THE PUBLIC IMAGE OF THE NCSC

ARTHUR H. RICE

Mr. Rice could not be present because of illness, so his speech was recorded and played at the convention.

It is an unusual privilege to address you in this manner, but I shall especially miss two things: the pleasure of seeing you and enjoying your program, and the opportunity of hearing myself introduced. Originally Brother Grimes was to do the honors. An introduction does such wonderful things for a speaker's ego.

The question before the House you already know: "What should be the image of the National Council on Schoolhouse Construction?" Actually this question is being answered for you now by 117 members of this Council. Your executive committee granted me the privilege of sending an SOS to the members of this group, asking for their ideas as to *how* this question should be answered. The replies received are stimulating and generous. Today I can only bring you some general impressions and some conclusions from these responses, but I shall turn over the entire set of replies to the executive committee and I am sure they will peruse the replies with much interest and profit.

The first question is: Who actually dominates the design of schoolhouses being constructed today? Is the architect the dominant influence? Sixty-two of the respondents to my questionnaire said yes, while forty-five said no, and ten were uncertain. I then asked the question, *Should* the architect dominate the scene? The question brought strong differences of opinion, and rightly so, because it involves a question of semantics. Some said "The architect is but he shouldn't be." Others said "He is and he should be." Some said "Architecturally, yes, but educationally, no." Some just said yes and no. They should be co-equal.

Past president Bill Flescher makes a very significant distinction on this question. He writes: "In the actual designing, yes . . . for design is an architectural responsibility; in planning preparatory to the design he should not be . . . this is an educational planning job. The architect and the educational planner must recognize the abilities, respectively, of the other and should not attempt overnight to become experts in the other's professional domain." And now may I vote on this question of dominant influence?

Some of you perhaps may remember the day when it was customary for the most prominent local architect to build the school building, and that's just what he did. He just built another school building. But you know how the picture has changed. The school architect has become a specialist,

competing against other specialists across the state and across the nation. In other words, the school architect now is in the selling business. He competes against a half a dozen or more architects in selling his services to the school board, and so he has to have ideas to sell . . . such as variations of the Trump plan, or the geodesic dome, or the loft plan. In doing so he sells his philosophy as to how a school should be designed, how it can be modern, or different, or economical.

I must confess that magazines contribute to this situation. New buildings today are a dime a dozen, and magazines like ours that feature school buildings say to the architect: "What are you doing that's different? What are you building that's dramatic or exciting?"

An architect often becomes nationally known for certain characteristics of the buildings that he designs. Architects have been studying schools as never before. Often they hire an educational consultant to advise them. In a number of instances the school architect probably is more conversant with the theory and practice of school organization than the school board or the school administration. These are some of the factors that have made the architect a dominant influence in schoolhouse design.

Is this good? Or is this bad? I think it can be either, or both. The influence of the architect today is producing a school that is beautiful and pleasant, and has aesthetic value. The one question in my mind is: In this departure from the traditional classroom, are we losing some of the improved lighting that we finally had achieved in the coordinated classroom? Are we losing some of the acoustical properties of the coordinated classroom? In some buildings that I have seen, I think we are.

The second question we asked was: "By and large, do school administrators furnish architects with adequate educational specifications for designing new school plans?" As you can guess, the answer to this question was overwhelmingly negative. The vote was 21 yes; 87 no; 9 uncertain. Typical comments were: "Educational specifications are very inadequate"; "Administrators think they do, but they do *not* spend enough time thinking through the implications"; "Educational specifications tend to be stereotyped." I quite agree with the man who said "This is our real basis of trouble, the lack of adequate educational specifications."

Bill Flescher gives us four reasons for the failure of administrators to provide adequate educational specifications. Some lack the time, others lack know-how. Some architects simply take over. The fourth reason is that local administrators sometimes are afraid to challenge the architects' design.

For the next several minutes, will you peruse these 117 replies with me? I won't try to organize any conclusions just now, because I'd like to have you create your own impressions. We will study the answers to the

third question which read: "What should be the image of the Council and how can this image be created?"

Here are two comments that we may want to think about later. One man said: "The Council should provide top people to work with school districts." Another said. "The Council should give individual advice about schoolhouse planning and construction." Here's another thought that I'll want to discuss later. It comes from the State Department of Eductaion in Ohio, and reads: "The National Council can be of great service by evaluating what is new in schoolhouse construction on the basis of educational results."

A Cincinnati member points out that the leadership of the National Council should be recognized by having one of its officers on the committee that selects projects to be exhibited at the AASA in February. He also would have the National Council express its disapproval of books on schoolhouse construction that, in his words, are "unsatisfactory."

Another suggestion that seems obvious, but I think should be reemphasized, is that "the image of the Council can be perpetuated and enhanced by continuing the practice of publishing scholarly works on pertinent subjects." I would like to interpret this to mean that more members of our Council should do more writing for books and magazines. Another member writes: "A better job of advertising should be done." He doesn't suggest how but he states: "When any person thinks of school construction he should think of the National Council of Schoolhouse Construction."

Here's a very definite suggestion: "The Council can improve its image by conducting an awards program for outstanding buildings, with emphasis upon experimental or new design thinking. It should be held and judged at the annual meeting, for prestige and national coverage, particularly in architectural magazines."

There were quite a few comments which said in essence: "I believe that the Council has pretty well established the proper image—a sound source of information and assistance to school systems in schoolhouse planning." Another member says: "See that the best practices are published." A member in Boston, Massachusetts, writes "Some way must be found to tap the tremendous amount of talent and experience in membership. The cowardly reaction of the most vocal members to the Reader's Digest article a few years ago gives an excellent illustration of how *not* to create the image . . . as is also the bandwagon hopping associated with Madison Avenue innovations."

Here is another rather critical observation. It also comes from Massachusetts, and reads "I would say that images are largely created by activity rather than purpose. In the case of the NCSC, its activity falls far short of its commendable purpose. There is a need to loosen the log

jam of potential that is available in this membership . . . An enlarged membership might help . . . Regional subdivisions are proving quite effective."

The old argument about changing the name of the organization came up again and again. One person said: "I think the word 'construction' is a wrong and limited emphasis." Another writes: "The image should emphasize the planning rather than the construction."

From West Virginia's state department comes this thought: "Publications supplementing the guide should be prepared to amplify principles and concepts of good planning. A more active role in plant research would enhance the Council's image."

This next idea you've heard before, but is a proposal that cannot just be waved away. It reads: "The Council should engage in research and make published reports available. This will probably require foundation support and the use of a full time executive secretary with the necessary staff."

A similar idea comes from the State Department in Kansas, as follows: "The Council should stimulate more basic research and consequently stimulate new ideas and trends. More money is needed for this type of image, also a larger full-time professional staff. Much can be done by cooperating more with private research in this field."

Three images were described by a professor and former school administrator in Michigan. He believes that "the professor who deals with school plans has a well-defined image of the Council, but for the practicing school administrator, the image of the Council is somewhat mythical in nature. He finds the documents rather dull although the quality of the production usually overrides this dullness. In so far as the school board and the public is concerned, the image of the Council is definitely cloudy," if not virtually nonexistent.

Harold Silverthorn had many fine suggestions. He thinks that the National Council should sponsor seminars. I think he has in mind that we could work more closely with universities and colleges in this respect. He also advocates that the Council should sponsor and promote research in special studies in the school building area. He said, "I am embarrassed to discover how little research there is in the school building field." He believes that here is an opportunity to urge the writing of more doctoral dissertations in this field, and the Council might suggest the problems with which these dissertations would deal.

A Dearborn, Michigan, member has a pictorial way of expressing his viewpoint. He says: "The image is faint from underexposure." Quite a different emphasis comes from the University of Virginia, where a member writes: "It seems to me that the Council is an educational organization. In the main, it must continue to educate people. If we do this job, I doubt if we have to worry about the image."

Another member proposed that the Council conduct a rather extensive comprehensive survey, to benefit from the experiences of members in meeting problems in their own areas. The survey then could be published as a pamphlet and its materials used for public releases.

From the Office of Health, Education, and Welfare comes another idea that involves money and staff, namely, "that the Council should have a library and school plant materials second to none in the country, and secretarial staff to handle correspondence."

Here is another specific proposal from New York: "Direct contact should be made to members for individual experience contributions, which will fit into a master information plan organized by our Council committee. This information should be released to Council members and interested parties and should be distributed once or twice a year."

Another proposal from New York suggests that the National Council set up a consultation service or at least serve as a clearing house for consultants who would serve at a reasonable fee plus travel expenses. This service also could be worked out in connection with the AASA and the ASBO.

Here is a switch. This independent member says: "I'm not sure that the Council should have an image," but he then points out that the Council does not seem to be recognized by other professional organizations and implies that we need to do something about it.

This perusal has taken us through about three-fourths of the 117 replies sent in by the membership. I've glanced through the remaining 25 percent and find that the ideas are quite similar. Many of these ideas are quite impossible without a larger budget or a larger staff. And we should note here that the Council is most fortunate in its relationships with Michigan State University and the excellent part-time services provided by Floyd Parker.

Now, I'm going to disagree with some of you who are my friends, and probably be very impractical if not unreasonable . . . by saying that I hope the Council can be and will continue to be financially independent.

I respect the achievements of the Educational Facilities Laboratories and I admire the leadership of Harold Gores. But—I hope you never ask him or any foundation to subsidize the Council. Schools need some group that can evaluate and criticize research, experimentation, and projects in schoolhouse planning, even if it's the work of the Ford Foundation, the NEA, or a branch of the government. The National Council would not be completely free to do so if it depends upon some foundation for part of its budget.

Some of you have said that the purpose and the image of the National Council is okay now, and it should continue to be. I asked Floyd Parker

for some historical documentation and he said: "You'll find the best description of this in the foreword to the 1958 Guide," and I did! When the Council was organized in an Atlantic City hotel ro m in March, 1921, the three men who wrote up the plan agreed that the primary purpose of the organization should be "to promote the establishment of reasonable *standards* for school buildings and equipment, with due regard for economy of expenditure, dignity of design, utility of space, healthful conditions and safety of human life." In its publications, continues the Foreword, the Council "has provided guide materials for those working in the field of school planning and construction."

The key word here is "standards," and it can be a dangerous concept. Too often standards finally find expression in terms of actual materials or actual measurements, rather than in terms of functions, because measurements and materials can change as techniques and commodities are improved. The Council realized this, too, in 1926, when it officially changed the emphasis of its guide materials to deal with principles and goals of planning, rather than minimum specifics to be provided, and that's where we are now! But is this enough?

We need an organization that will note and describe the mistakes that are being made in the construction of new school buildings nearly every day. Architects can't admit their mistakes—it would hurt their business—although they will tell you privately that they know that they do make mistakes. Superintendents can't admit that anything is wrong about the new buildings, because it might cost them their jobs, and so day after day and year after year the same mistakes are made in different buildings across the country. Why?—because no one studies them. No one reveals them. No one admits them. Isn't *this* a big problem with which the National Council should be concerned?

Several weeks ago Floyd Parker and I were having luncheon on the campus of Michigan State University with Bill Hawley, the assistant dean of the School of Education, and our conversation drifted to this question of the image of the National Council. Hawley asked this provocative question: "How do other professions and industries get help for designing their plans, hospitals for example, or factories or stores?" This leads us to the question: "What should be the role of the educational consultant?"

More and more, I hear about school administrators who have retired and have decided to become consultants. They hang out a shingle and ipso facto they are qualified to tell a school board and a school district how to plan a new school building. Is this good? Of course we need consultants, but don't we also need some qualifications for them? The fact that a man has been an administrator all his life is no proof that he can guide others in setting up educational specifications. May I suggest that this is a problem with which the Council ought to be specifically con-

cerned? Certainly it might ask that those who seek to serve as educational consultants in the schoolhouse planning field meet certain standards that the Council itself might set up.

There was one suggestion on the questionnaires that I would like to especially endorse, that at least once a year we poll our own membership to get opinions and advice on current problems in schoolhouse planning. This is simply a method of communication that we have not adopted. We should tap our own resources. I'm sure every member would willingly fill out the questionnaire for the sake of getting the information for his own use. Even if the questionnaire is not released beyond our own membership, it would be invaluable as a guide for our own programs.

I would like to leave with you one suggestion that I think would greatly increase the image of the National Council on Schoolhouse Construction, and it will not require a grant from a foundation, nor an increase in the staff. You are the authorities on schoolhouse construction. The educational profession and the public want to know what you think about controversial issues in schoolhouse building, but they won't know unless you tell them officially. They want to know now and not wait for publications or yearbooks. At first, you may think my proposal is out-of-date or too simple, because I am saying that a major achievement of each convention should be the discussion and the adoption of resolutions. The Association of School Business Officials has also come to this conclusion. It would require time and effort to gather the issues and to try to reach some general agreements before resolutions are brought to the meeting. But these resolutions will have meaning and value for you, for architects, for magazines and newspapers, and for the public—provided, of course, that we have the courage and the vision to deal with the real issues of current design and schoolhouse construction.

You have been most kind and patient to listen to a voice. But the voice I hope you will listen to throughout this convention is that of your own judgment. Virtually every suggestion that has been offered this noon has been heard before. And I'm sure every one of them has been considered at some time or other by the Council or its officers. But perhaps this is the time to re-think and re-evaluate some of these ideas. I hope so!

Leo Buehring of our staff is with you, and I shall eagerly await his report of your meetings. Thanks again for listening!

INFLUENCE OF THE SCHOOL PLANT ON THE PROGRAM OF PHYSICAL FITNESS

SIMON A. MCNEELY

It is a pleasure to bring you greetings from the President's Council on Youth Fitness and to have a part in your important meeting. I am particularly pleased to have this opportunity to speak to you during this 39th Annual Meeting when your President is my good friend and erstwhile colleague, J. L. Taylor.

Recently, I read an interesting space filler in the newspaper to the effect that some people use language to express thoughts, some to conceal thought and others instead of thought. My hope, of course, is that this presentation will be mostly in the direction of the first-named category.

And my first thought is with regard to the topic of this talk which was assigned to me. I am going to deal with it in reverse because I believe it is more in keeping with the philosophy of your organization—and of you as individuals—to speak on the question: What is the influence of the physical fitness program on school plant planning?

But first, may I give you a bit of background on the national need for physical fitness and the work of the President's Council on Youth Fitness, as we see it.

These are troublesome, perilous times—times that require the best of all of us. If this nation is to meet its commitments "at home and abroad," then we Americans must be healthy, fit, vigorous, vital, dynamic, energetic, active, capable—all the qualities that add up to responsible, productive, creative citizens.

And if we are to prepare our children adequately for the world of today and tomorrow, then every child deserves to be helped toward optimum health and fitness—so that he can profit most from his educational opportunities, so that he may live most fully. We must see to it that our children and youth are free of the strains and drains of poor health, physical defects, or low vitality.

This is a great concern of President Kennedy. He speaks of health and physical fitness as being "basic to other forms of excellence."

He has also said, "I do not suggest that physical development is the only object in life—or that we should sacrifice cultural and intellectual values in the pursuit of more perfect physiques. But I do suggest that physical health and vitality constitute an essential part of a balanced life."

Our people are not physically fit. This is a national problem affecting every age level, every segment of our population. It is said that almost one-half of all adults and one-fourth of all children in this land of more-than-plenty are obese—FAT!

While our children and youth are fundamentally healthier, taller and heavier than previous generations, they lack muscular strength, stamina, vigor, robust physical development. Any number of research studies bear out this statement. In the interest of time I will forego presenting a number of interesting statistics—except for one very recent finding. In two school systems which conducted a pilot fitness program last year, in cooperation with our office, several thousand children were given a screening test of physical performance. This is a very low standard to identify the physically underdeveloped child. As an example, to pass, a boy 10-14 years old should be able to do one pullup, fourteen situps, and four squat thrusts, the last within a 10-second time limit. In these pilot schools 50% of the girls and 54% of the boys failed to meet these low levels of performance!

And we have no reason to be smug about our general health conditions even though we have made exciting progress during the last half-century. I've mentioned obesity. Teen age V.D. is on the rise. Tuberculosis is still a major health problem even though we have the know-how to eliminate it quickly. Accidents continue to take a tragic and mostly preventable toll of human resources. Heart disease, the greatest adult killer, could be curtailed by applying what we know about exercise and other aspects of healthful living. Alcoholism continues to increase in alarming proportions—as do hypertension, mental illness and other manifestations of the pressures of hectic, "modern" living. The greatest complaint of business executives, according to the head physician of the Life Extension Examiners, is chronic fatigue.

Someone has described the American adult male as overboozed, overfed, overweight, and underexercised, underdeveloped, and undervitalized.

All the facts and data lead to one inescapable and unequivocal conclusion; that in this great land of ours with our vast resources of medical and dental services, with our superabundance of food, with the highest standard of living in all the recorded years of mankind, our youth are not as healthy and physically fit as they could or should be.

Any nation that spends—as we do—20 billion dollars a year on organized crime and another 20 billion dollars a year on entertainment (most of it the passive kind) and yet has a youth fitness problem, had better look to its system of values.

How much do we spend for school construction in a year? Over in the Labor Department they say we spend much more money for the ABC's than we do for the three R's. The ABC's are alcohol, betting, and cigarettes.

In one sense we are victims of our own progress. Every gadget, every push-button, every power-operated device that makes life a bit more comfortable and easier also takes away something in physical effort still needed for biological development—and leaves a void of movement—*action*—that must be fulfilled through *planned* activity.

And it may well be true that such easy living may take something out of our backbones—our self-discipline, our strength of national purpose.

It has been said that there is no luxury that a people cannot do without but once having had it will never give it up.

In recognition of this urgent national problem President Kennedy has taken vigorous action. He has reorganized the President's Council on Youth Fitness which is now composed of eight Cabinet-level officers:

Secretary of Health, Education, and Welfare—Chairman

Secretary of the Interior

Secretary of Defense

Secretary of Labor

Secretary of Commerce

Secretary of Agriculture

Attorney General of the United States

Housing and Home Finance Administrator

The President has named Mr. Charles "Bud" Wilkinson as his Consultant on Youth Fitness. Mr. Wilkinson, an able and dedicated man, and his small staff of four professional members, have been working diligently, through appropriate channels, to stimulate specific action programs.

Our major efforts have been centered on the schools. This, to us and apparently to many others, makes sense. The schools provide the leadership, facilities and *opportunity* to reach almost all children and youth in the most formative stages of development. The schools have long held as one of their basic objectives the development of health and physical efficiency.

With the assistance of representatives of 19 national organizations in the fields of education and medicine the Council published a booklet, "Youth Physical Fitness—Suggested Elements of a School-Centered Program." We are indebted to the State Department of Education in every state for the distribution of the publication, and further, we are appreciative of the support of state and local school administrators and other personnel in the implementation of the recommendations.

In our booklet and in our work with the schools, we have tried to follow several principles that we set up for ourselves. Among these:

1. Education is a responsibility of the state and community. The Federal government does not administer or supervise educational programs. It may recommend and even advise and assist, regarding problems having national significance, but always with full recognition of local autonomy.

2. The PCYF works through appropriate channels and cooperates with operating agencies and with responsible organizations at national, state, and local levels. Our main line of communication is education in the U. S. Office of Education and State Departments of Public Instruction.

3. The Council recognizes the fact that many excellent school programs are in operation throughout the nation. Our function is to assist schools with no programs to get started, and to help those with programs to continually improve.

4. Our efforts must be guided by a sound concept of physical fitness.

Here is our thinking on this, as expressed in the "Blue Book:"

"The stress on physical fitness is needed and timely. The existence of many fine programs is recognized but there is a need for improvement in many communities.

Physical fitness is but one aspect of fitness: however, it is a very significant aspect and one which is basic to other forms of excellence. Efforts to improve physical fitness should be carried on with full regard for all fitness qualities—spiritual, mental, emotional, and social.

Physical fitness itself is a broad quality involving medical and dental supervision and care, immunization and other protection against disease, proper nutrition, adequate rest, relaxation, good health practices, sanitation, and other aspects of healthful living. Exercise is an essential element to achieving physical fitness. Strength, stamina, endurance, and other desirable physical qualities are best developed through vigorous activity. Physical fitness is achieved through a sensible balance of all these provisions adapted to age, maturity, and capability of the individual.

American parents need to be concerned that their children have every opportunity to develop and maintain physical fitness. School programs should emphasize physical aspects of fitness as part of total fitness."

Now what does all of this add up to in terms of your major interest? Our recommendations relate to two types of programs; (1) a basic physical fitness program, and (2) a broad and balanced program of health and safety education and physical education, emphasizing physical fitness.

The basic program, quite frankly, will have little influence on school plants. By design it is a program that we think *any* school can undertake at once regardless of facilities, personnel, and other resources. We don't want the lack of a gymnasium or physical education teacher to stand in the way—to be an excuse—for not doing *something* NOW.

The basic program includes the following elements:

1. Health appraisals through the resources of the home, supplemented wherever necessary and feasible by school and community services, provide medical examinations, screening tests of vision and hearing, height and weight measurements, and other health appraisals to determine health status and correct or adjust deficiencies.
2. As part of the health appraisal, use a screening test of physical performance to identify the physically underdeveloped child and provide a developmental program to meet individual needs.
3. Provide a minimum of 15 minutes' physical activity daily for every child as part of the physical education period.
4. Use a valid comprehensive test of physical achievement to measure progress and motivate improvement.

This program, except for the health appraisal elements, can be carried out with little or no equipment, and in whatever space is available.

But this basic program is but a *beginning*. Schools are urged to work toward a quality program of health and safety education and of physical education. And here the school plant must be considered in all aspects in which to accommodate such a program. The "Blue Book" suggests administrative provisions in keeping with standards for a high-quality program recommended over the years by the profession. The suggested provisions call for regular instruction in health and safety and a broad program of physical education *daily* in the elementary schools. On the secondary school level, such provisions entail a *daily* physical education period for all boys and girls; additional time for health and safety education (at least one semester, daily, during both junior and senior high school); physical education class size of 35 pupils; adequate teaching stations indoors and outdoors; expansion of opportunities for physical activity through intramural, extramural, and interscholastic activities, through sports and fitness clubs, and through physical recreation programs.

The Council has in preparation, through the assistance of the American Association for Health, Physical Education and Recreation, and other cooperating national organizations, a supplementary booklet which will suggest guidelines for a broad program of health and safety education, and physical education. It is being referred to as the "Gold Book," but its physical format has not yet been fully decided upon.

Obviously, these and other related recommendations will require an expansion of facilities, classrooms for teaching health and safety, more gymnasium space, auxiliary gyms, outdoor areas *and* swimming pools. Surely if every boy and girl is to learn to keep fit there must be provided sufficient instruction space and materials. The fitness needs of the individual and the nation are not served when physical education classes are not scheduled because of overcrowded conditions. The recommendations and standards of your NCSC *Guide* and of such publications as The Athletic Institute *Planning Facilities for Health, Physical Education and Recreation*, which some of your members helped prepare, are helpful sources of technical information. The emphasis upon physical fitness will require more developmental equipment, both outdoor and indoor: climbing ropes and apparatus, vaulting boxes, parallel bars, mats, horizontal bars, and the like, including new and ingenious devices.

But this is only half the story. The schools must not only be concerned with the needs of the school-age population. They must also recognize their opportunity and responsibility to cooperate in fitness programs for out-of-school youth and adults of the community. Only through full public use of the public's investment in the school plant will the physical fitness of the total population be strengthened. There is no other way if 185 million Americans—and increasing millions every year—are to gain the benefits of regular exercise.

Within the next three weeks another Council publication will be off the Government Printing Office press. It's called *Physical Fitness Elements in Recreation*. The recommendations, based upon discussions held with national leaders in recreation and related fields, urge schools and public and voluntary recreation agencies to promote physical fitness through recreation. Included in these recommendations are the following:

1. Develop and carry out a community-wide plan, emphasizing physical fitness, which involves all organizations and agencies having recreation interests.
2. Provide opportunities for and encourage daily participation in vigorous physical activities by all age groups, in all programs wherever possible and appropriate; to encourage individual citizens to employ the self-discipline necessary to fulfill their own commitments to regular exercise.
3. Provide year-round opportunities for physical fitness centers and sports clubs.
4. Make the widest possible use of available leadership and facilities, working, where necessary, for enactment of state-enabling legislation and for local ordinances which authorize use of public property or funds for recreation.

In line with these recommendations several interesting projects were carried on last summer in California, New York, Florida, and other states. Physical fitness programs—courses, pilot studies, enrichment opportunities, to use a few of the terms—were held.

Many school systems are offering adult education courses in physical fitness (slimnastics, slenderizers, etc.), school-community recreation programs, P.T.A. fitness projects and the like. These are in the right direction. But much more needs to be done. Our vast storehouse of school fitness facilities, now mostly unlighted and locked tight after the daytime classes are over, must serve the public more fully. Otherwise we're getting only about one-half of what we pay for. The airlines schedule their million-dollar jets in night and day operations, as completely as public safety and the payloads permit. When the steel mills operate at less than capacity it is a matter of great economic significance to the nation. In like manner, to have school gymnasiums and playrooms and other areas unused while our people are rusting away from lack of activity is an unfortunate waste of physical and human resources.

Not only must we use what we have. We must build more fitness-producing school facilities. The only possible hope of encouraging Mr. Joe Doakes to drag himself away from the TV set and participate regularly in healthful exercise is to offer an attractive, satisfying program in some nearby neighborhood center. Here he can participate with friends and neighbors and not spend much time or money traveling back and forth.

The logical center for such participation in most neighborhoods is the elementary school. A prototype of such a facility has been demonstrated successfully in the community-school program in Flint, Michigan. Here, as many of you may know, each elementary school includes a gymnasium and other facilities to serve all the people of the neighborhood in a variety of activities.

Implementation of this idea necessitates a fresh approach to school plant planning: a facility to serve the children during the day and yet adaptable to youth and adult games, dances, and conditioning activities after school. As a physical fitness center, it would require developmental equipment—gymnastic apparatus, pulley-weights, and the like. Perhaps the old style YMCA-type gymnasium with its running track (which has now given way to spectator seats) and its climbing ropes was in the order of what we need now. The buildings and equipment should be ruggedly constructed to withstand heavy wear, and maintenance requirements kept minimal. Such activities as roller skating and square dancing involving large numbers of people should be anticipated. There is need to store and move gymnastic apparatus. Ventilation and cooling of gyms and playrooms during warm weather must be given careful attention. Acoustical controls are a persistent concern.

The requirement of facilities to serve the entire student body—and the community as well—increases the premium on economical construction. The need for further research in design and materials will offer a constant challenge to all of you and your associates.

Both the "Blue Book" and the new recreation publication call attention to the importance of outdoor recreation activities that build fitness and encourage healthful participation. Hiking, camping, boating, cycling, fishing, hunting and other outdoor sports become increasingly important as urbanization engulfs more and more of our population and as the softening processes of our way of life continue. The report of the Outdoor Recreation Resources Review Commission has reflected nationwide interest in this important subject and has recommended vigorous action with respect to Federal agencies and programs. The schools have long recognized the educational and recreative values of outdoor education. Slow but persistent progress in school camping and outdoor education programs can be noted. Here is a phase of schooling where much more needs to be done in acquiring property and designing functional facilities. The sharing of lands and resources by schools, parks, conservation departments, and other agencies will usually result in economic use of the public dollar.

All of the foregoing presents a large order for our educational system and, particularly, for your work. But these are challenging times for educators and for all citizens. The health and vitality of our people is fundamental to our national productivity—to the very preservation of our way of life.

There is a readiness and a willingness on the part of the American public, if I sense it correctly, *to get with it!* I think many Americans are becoming fed up—both literally and figuratively—with our national characteristic of indolence and materialism—with our vegetative existence—with our lopsided value system that fattens us with ease and comfort while it eats away at our physical and moral fiber.

Marshall Petain said of France during its dark days of World War II, "Our spirit of enjoyment was greater than our spirit of sacrifice. We wanted to *have* more than we wanted to *give*. We spared effort and we met disaster."

Does this statement hold a lesson for us?

There is, I believe, a discernible national guilt-feeling that all is not well with us as a people—that we must do *more now* to meet our responsibilities.

I think the American people realize that we cannot sit and enjoy the fruits of our civilization without putting something of ourselves back into the process of the culture.

Kruschev has said, "A communist has no right to be a mere onlooker." And neither can a citizen of a free society sit on the sidelines, a spectator to the battle of ideologies.

Most Americans are ready to undertake the self-discipline that is required of responsible citizens of our beloved country. I remind us all that the self-discipline of physical fitness is the foundation of all the rigors of self-development.

Our schools are being asked to carry a large share of the responsibility—or, rather, the privilege—of helping our people exercise self-discipline and keep fit. It is our job as educators to provide the encouragement, the opportunities, and the facilities for all our children and youth to learn to live effectively and for their parents and other adults to maintain their vigor. And your part of the school's effort is significant, challenging, and, I believe, rewarding.

WEDNESDAY EVENING INTERROGATION

Merle Stoneman: This presentation was certainly clear, concise, and complete. We are going to turn to the panel members now. The speaker may ask one or more questions. He can make any comment he pleases. Mr. McNeeley will have a chance to respond if he wishes. Professor Strevell, first.

STREVELL: Mr. Chairman. Dr. McNeeley has placed this matter in the proper perspective and I think we would have no question basically about the philosophy. We have the "Blue Book" which has been mentioned. On page 12 as you are aware, it states ". . . sufficient teaching stations to handle one-sixth of the pupil population at one time. These should include gymnasiums, swimming pools, tennis courts, and other indoor and outdoor facilities."

Now the first question is: Do we have here a sound answer regarding the overall space requirements for physical education facilities? There are two or three sharp remarks in here. One is that an athletic program alone does not (and does not is in italics), constitute a basic program in grades seven through twelve. And yet I asked my coaching friends the difference between a major and a minor sport and they tell me the major sport is the one that takes in the most money.

Looking down the long road ahead, is it proper to think that each pupil has a station, as I think our keynote speaker intimated, and in addition one-sixth of a share in the physical education program, and maybe another part of the pupil station in the library, and another part of the pupil station in the cafeteria, so that he has 14 pupil stations in the building?

Question two. Should the dressing rooms be oriented primarily to the out-of-doors or to the indoor gymnasium? Now this of course is related to our ability to control the use of the out-of-doors. For this reason, we have for distribution a study produced by the Architectural Research group of Texas A & M College entitled "Shelter for Physical Education" which, because of its studies of climate, should stimulate some thinking.

The location of the dressing rooms will affect expanse facilities in many cases. And as you know, as the enrollment begins to spill over, the biggest problem seems to be how to expand dressing rooms in proportion to the enrollment. The "Blue Book" recommends dressing rooms for grades four through twelve. Are we willing to provide dressing rooms for those lower grades, four through six?

Concerning this relationship to the out-of-doors, in Denmark in 1949, I saw a very remarkable solution in a new junior high school. When the children came to the foyer, there were hand-washing facilities for 40 persons. An entire class could wash their hands at the same time before going to class. The lavatories were off this foyer. Outside, about 75 yards from the building, were the dressing rooms on the first floor of a separate building, with an exercise room on the second floor. This was in a climate as far north as the Hudson Bay, although they do not have a very large amount of snow in the winter.

My third question is: Should architects provide examination rooms for annual physical exams and exercise rooms for fitness tests, in districts where neither the state nor the local regulations require these functions? In other words, should spaces be based on educational theory or on the actual usage they will get? Now I have heard this question raised twice before at this conference, and I think that our speaker intimated something about it.

We are told that one-half to three-quarters of the nation's young people do not have daily physical education. The state departments rarely enforce state standards; the teachers are generally not trained to give the proposed tasks, and in many states annual health records are not kept. So we have the drag of traditions.

In the fourth place, I wonder if we should challenge the guide statement that "the size of the rooms depends on the number of pupils." Does this have anything to do with physical fitness? In our zeal to enforce this standard we have tailored the rooms to the size of the groups. I find in our

area that the new schools being constructed allow about 750 square feet for the elementary classroom on the theory that they only want to have 20 children in it. But actually, they continue to assign 30 to 35 children, which would require more than 900 square feet. In so doing, they are saving less than one-half of one percent on their annual budget. I think that this would be an interesting subject for the Council's research.

My last question has to do with the community aspect of physical fitness. This seems to imply that a different kind of survey would be made in preparing the educational specifications, because a youth council will take a broader viewpoint than a school board. They will think in terms of 12-month utilizations, and school boards do not do that. They will think in terms other than instruction and are not handicapped by definitions of education.

McNEELEY: The Chairman says that I may reply. One thing that I appreciate is the fact that you read the "Blue Book." I cannot say that for everyone who raises questions about it. Frankly, I think it is wonderful that a person has questions based on intelligent reading, but it annoys me when people make comments about things that they do not take the trouble to read.

With regard to one-sixth of a school day. That recommendation comes over a period of years from the *Education Policies Commissions Statement—Education for All American Youth,* which suggested that this area of health-physical education should occupy about one-sixth of the curriculum time. I do not think that a fine fractional breakdown is important. The important thing is that every child ought to have an opportunity to have physical education every day. And whatever number of teaching stations it takes to do that, then that is what we need.

With regard to athletics, we see this concern for the fitness of all youngsters, both boys and girls, and we do see the importance of intramurals, extramurals, intersquad athletics, sports and fitness clubs and all the other supplementary opportunities to a good program. Athletics has many valuable educational outcomes if properly conducted. We would see that as the top-level type of participation for all those who want, and can obtain, that degree of skill.

With regard to the orientation of the shelters and the dressing rooms, we need to look at the use of these facilities not only during the school day but also for after-school hours. The building has to be planned so that dressing rooms, toilets, and play areas are available for use of youngsters and the public after school hours. With regard to dressing rooms for fourth grade, that is a very desirable and hopeful stage to reach. Our basic program recognizes that you do not need that to get started with the physical fitness program. I think that tradition has shown us that for the elementary grades you can manage without dressing facilities, but

from the standpoint of good hygiene, it is desirable to begin the change of clothing in the fourth grade, and certainly this type of program is ideal.

We have several cases of community use of the school plant that surely would necessitate a different kind of plan than one designed only to serve the educational program for the six-hour day. A prototype of this kind of facility exists in Flint, Michigan, in the community-school program. I do hope that we see the day when almost all the elementary schools will be community school units such as those in Flint, with a gymnasium that serves youngsters in the daytime, and people of the community for varied programs after school hours.

With regard to our own program, the Office of Education conducted a survey this year to determine to what extent these recommendations were being implemented. About 77% of the schools have done one or more things this year in terms of implementing the program. The amount of testing has increased about 20% during the past year in high schools, and about one-half of the high schools surveyed indicated that they have done some physical achievement testing this year. About 56% of the schools reported that they used the "Blue Book." We made a check with the parochial and private schools, and found that we did not reach them quite as effectively. About 25% of them had indicated that they used the recommendations of the "Blue Book," but the interesting thing was that about 50% of those schools that had nothing last year were planning to put in some aspect of the program this year. So we were quite pleased with the degree of response that is being shown to these recommendations.

WILSON: Mr. Chairman, fellow panel members. I also agree with the philosophy that was emphasized by our speaker. I would like to have three or four questions answered, as a matter of course.

There is no question that a different type of building would be required to conform to the desire for community physical activities. The Office of Civil Defense wants to provide fallout shelters in our schools, and now we want to make it a community physical education facility. I just wonder what our schools are supposed to become eventually?

Next, I think there is another follow-up on physical education that I do not know how to solve. Local people want athletics. I think there is going to have to be a physical education program for the local people, as well as for the school officials, to build physical education facilities rather than gymnasiums. My own state of Indiana is most familiar with the gymnasium situation. Many citizens there would rather see their money go to build a gym first, and then to build a school, spectator gym.

Who is going to teach the physical education? Coaches, who depend on their job for having winning athletic teams? Or are we going to have different physical education people to take over the entire program?

I am very much in agreement with the city's recreation areas being attached if possible to the school areas, increasing the number of outdoor activities. One other question that I would like to ask. Where are we going to get the money? In the state of New Mexico we have a number of areas that are very desperately in need of classrooms, and we do not even have enough money for that.

McNEELEY: Thank you, sir. I am surprised that this valid question was not raised before.

With regard to athletics and with regard to all these points, I think it will require an educational program. People have to put their values in this. As I mentioned, we spend $20 billion for entertainment right now in this country, most of it sitting down and watching something. If you applied one-half of $20 billion in school facilities you would be able to answer some of these questions.

In our community, we tried for years to get some swimming pools for the schools. We do not have one swimming pool in the whole county that is operated under public tax money. And yet we have many, many hundreds of people who pay $300 to join the community pool, plus $100 a season for use of the pool. It is really just a matter of what we consider important. Perhaps the public support and effort behind this fitness movement may help. The Advertising Council has taken on youth fitness as one of its public service efforts. We have one of ten of the major public service items that are being promoted. A commercial advertising firm has taken on the President's Council as a public service. And so right now we are getting communicative messages through TV, newspapers, magazines, billboards, and so on, which are paid for because many millions of dollars a year are donated. The whole effort for the next three years is going to be concentrated on trying to encourage the public to get behind the school program of physical fitness and support good programs. We hope that you will see some results of this in your communities. You may be interested to know that John Glenn has just done some spot announcements for us, and in a couple of weeks you probably will see him on your TV screens, urging you to be concerned with physical fitness in your schools.

We also have another useful tool which I would like to call to your attention. We have a film now called "Youth Physical Fitness, A Report of the Nation." It describes the basic and the broader program, and urges community support. Copies of the film are available at the State Education Department libraries, and State Health Department libraries. The film is done as a public service with the cooperation of the Equitable Life Insurance Society of the U.S. Their agents can help you get copies if you cannot get them from the other sources. The film features Gene Kelly and Bud Wilkinson as narrators. The President is on it in one sequence, and the programs at Muskogee, Oklahoma, and Kansas City, Missouri, are shown in color. I do think the picture is one of gradual encouragement in light of educating

our people. The President said, "This is really a matter of changing the basic way of life for more people." We need to put this matter of health and vitality foremost in your thinking, and in their value system.

WHITEHEAD: Mr. Chairman and fellow interrogators. I do not have any questions, but I would like to say that I think the Council members for at least the past decade have tried to achieve facilities that would do all the things Mr. McNeeley has suggested, and some of the programs that have been proposed.

I have long been proposing new school plants that have adequate health suites with rest facilities, examination rooms, and facilities that would permit youngsters at least one period a day of physical education. I do not think that we should go so far as to say one-sixth of the time, as all schools do not operate on that basis, and Mr. McNeeley, I think, admitted this deficiency in his suggestion. We should have physical educational facilities for swimming, for intramural games, for after-school hours, and adequate outdoor activities.

The point that was brought up a moment ago about how to get all of these things is appropriate. Even though we may have proposed them as educational planners of school plants, they have not always been achieved because people in the communities are not willing to pay for them.

I suppose that the main question I have for Mr. McNeeley to answer is more philosophical than technical. What is being done about getting these people to put down the beer can and leave the television set? John Dewey, now open to repute in some quarters, but whom I believe developed the soundest and most complete philosophy of education, brought up this problem in his book, *Art Is Experience.*

MCNEELEY: Well, thank you, sir, I am glad that you mentioned John Dewey, because here is another instance where people have talked about his philosophy in progressive schools, and I am willing to bet that not one out of a hundred who speak in derogatory terms has ever read anything that he has written, or really knows the basis of his philosophy.

It is going to be a very difficult job to change the trend to easier and softer living but that is what must be done, and the more that we work at it in terms of these messages, the more opportunity people have to get activity, the more we will be successful in the effort. I think that there is a change already noticeable. If you look at the growth of such emporiums as Vic Tanney, you see that people are becoming exercise-minded. Very few people argue with us about physical fitness. It is like motherhood—everybody is in favor of it. The thing is to get people to buckle down and do it.

I do think that people are aware of it. A year or two ago, when the subject of physical fitness or physical education would come up, an ironic

or humorous remark about muscles or exercise would be made. Now in a group of people, they begin to ask you about the work of the President's Council, and you start talking about it, and they do not make fun any more. They get a little serious and say, "Yes, that is important," and then, "My kids either do or don't do this."

With regard to the second point concerning money. The people of Flint, Michigan say that they have not lost a school bond issue over a period of years since the Mott Foundation Program got under way in the community, where the school really functioned. The fact was that the people went into the schools to get some service, and some enjoyable and worthwhile experiences there made them very much aware of the schools. You couldn't take those facilities away now. I know of another little community in northern Louisiana. During the middle of the depression, they built a school with a gymnasium, a swimming pool, locker and shower facilities, and uniforms for kids from the fourth grade up. A friend of mine was the principal and I asked him, "How did you get that?" He said "Well, we decided that was what we needed for our children here, and every time we went anywhere, to Sunday school, to Lions' Club meeting, or PTA, or while teachers were talking to parents, we just said, 'Your children deserve to have these facilities,' and within three years they built that kind of a physical education plant."

In regard to Mr. Wilson's question as to who is going to teach this, I think this will be a problem. We believe the elementary classroom teacher must be better prepared for his responsibilities, and some colleges are doing a better job of preparing the teacher in health, safety, and physical education. Many of the schools provide the teacher with the help of a specialist trained in elementary physical education. At the high school level, if the coach is a physical education major, and the administration hires him to teach rather than to coach ball games, that answers the question. If they hire him to win ball games and to throw out a ball while he is preparing for the next contest, then that is something else.

We have many instances where coaches have done an excellent job of teaching physical education. A lot depends on what is expected of them in their training. My own personal feeling is that the coach ought to be a person who is professionally prepared in physical education, although there is a trend which shows that most of those getting the coaching jobs are hired in academic assignments, and not in physical education. Some people would advocate that.

At this point several questions were asked from the floor. Due to the location and limitations of the recording equipment, it was not possible to get the exact wording of these questions. Only the main elements of the comments and questions from the floor are presented here, and Mr. McNeeley's comments are presented in a redaction.

QUESTION:

The first part of this question was a comment on the Outdoor Recreation Resources Review Commission. It was mentioned that this volume, although it lists every national, county, and township park, did not list any schools. The biggest weakness of this report is the failure to recognize the role of schools and school sites in providing opportunity for physical education and recreation.

The second part was concerned with the limitations placed on schools by Public Laws 815 and 876. The limitation of 105 square feet per pupil in secondary schools does not provide adequate room.

MCNEELEY: I think that your point is well taken, but the ORRRC report itself, as I understand it, was concerned with outdoor recreation of the outer urban type. I think that they purposely omitted schools, mostly in terms of that definition, although I do not fully agree. I would agree with you that there is much to be concerned about for those who are interested in the school's responsibility for recreation. However, an additional supplement to the ORRRC Report by Julian Smith deals with the school's responsibilities to outdoor education. I think a limitation of the ORRRC Report exists in the relationship of the Bureau of Outdoor Recreation to Education.

With regard to Public Laws 815 and 876, we too are concerned about the limitations of the facilities there. As I understand it, your interpretation of the legislation puts a main emphasis on instructional areas. They will include the physical education building if it is not primarily used for athletic purposes. I have thought for quite awhile that we could go on the interpretation of those laws to get more facilities in this area.

Concerning the program however, I think we can hold our heads up with regard to this set of recommendations from the President's Council on Youth Fitness. We have said from the beginning, in the first line in the "Blue Book," that we recognize the Federal Government does not control the schools, and that education is a responsibility of the state and the community. That is the way we plan to work, and have tried to work, and hope to continue to work. Several of the suggestions of the "Blue Book" have come from professional groups. Our point of view is that you do best with your own state and local guides, but if our suggestions are helpful, we certainly would want you to use them. We do feel that it is a responsibility of the Federal Government to be concerned about problems affecting the national welfare, and certainly the problem of physical fitness fits into that category. We think that it is an obligation to call attention to that, and to use whatever leadership and resources are appropriate, so the people recognize this is a problem and do something about it.

QUESTION:

A question was asked concerning the balance in the use of indoor and outdoor facilities, and the use of a school facility by the entire community.

MCNEELEY: With regard to the balance and use of outdoor and indoor facilities, it seems to me that it depends on program and climate, and other things. In terms of good physical education we would recommend where possible that the instruction and the activity be done outdoors, if it can be done as well as indoors. It seems to me that some of these things will result in a savings to the taxpayer, if we could present it in that light.

There is no question in my mind that in the long run the taxpayer gets more for his money if the school facility can accommodate a good proportion of the community program. It is used for the children, and even the community, during the day. I do not see much sense in building a school and keeping it dark for two-thirds of the year, while down the street there is a swimming pool, or a boys' club, or a recreation facility. We have all of those in the community where I live, and if we used our school facilities to the maximum we would certainly serve a lot more people, without building additional or supplementary facilities. I know it takes more money to operate them. People have to recognize just what their tax money is going for.

In terms of need, in many of our crowded sections and even in many of our suburban areas, the only activity the child gets is in the school day. Sometimes it is very little, but it is more than he gets anywhere else. If you look at the needs of the adult public—185 million people, and 200 million within the next fifteen years or so—and if you want to encourage regular exercise and activity, it is going to take many facilities. I think that the elementary school is about the only answer for meeting the needs of a large percentage of the population. If we all went out right now to play tennis, and golf, and swim, we would just inundate every available facility and be lined up for blocks. We will need to get our activity both at home and at some kind of a neighborhood center, if we are going to live the kind of a life that science and medical research has indicated is necessary for us.

Another question concerned the relationship and emphasis of a developmental fitness program and recreation.

MCNEELEY: As I mentioned, our concept involves other things—health teaching and all the rest. The youngster's activity is important because that is where the youngsters are short-changed, more than ever before. I hope this discussion will not minimize the viewpoint that the schools can do a good job right now, in meeting the needs for physical activity regardless of what their facilities are, and that is why we have hammered away at the basic program.

However, the basic program would not meet even our own definition of a good physical fitness program. The emphasis on the broad approach is really not to appease any professional group, but because we honestly think that for long-term fitness, people must be educated to understand the value of activity and all the other aspects of healthful and safe living, and make them a part of their lives. The only way that we can know this is done is through good educational experience in health, safety, and physical education. We have made a big point of the basic program and we will continue. We hope every school will undertake to do something, and we think that every school can do something along the basic lines. We also will work to encourage a higher quality for health-physical education because we feel that is important for the person to have an intellectual commitment to these aspects of good living.

The recreational phase is important also. Our emphasis there is to call attention to the importance of the physical aspects. While billiards, crafts, dramatics, songs and music are part of a good recreational program, which we understand and respect, we think that the greater portion of one's recreational time should be given over to physical forms of education. We also recognize that recreation makes other contributions to the total development of the person, and therefore we must realize that he should give a fair proportion of his recreational time, his free time, to things other than physical participation. So we have a core of concern, which is the basic program, and we see these other things as being very important to long-term effort.

I appreciate these questions and I am very glad that I have had this opportunity to meet with you and present our views to you. Thank you very much.

Chairman Stoneman concluded the session by thanking Mr. McNeeley and the panel members for their participation.

UNFINISHED BUSINESS

NATT B. BURBANK

It is indeed a privilege to be invited to address this important organization. You have served education well during the forty years since the inception of your activities. The work of the Council is living proof that the quality and quantity of services rendered do not necessarily vary in direct proportion to the size of membership. The help which you have given to educators all over the nation is far out of proportion to the length of your membership roster.

For 32 years your *Guide for Planning School Plants* has been a most trusted and helpful handbook for school administrators, architects, school boards, and any others with responsibilities in the field of schoolhouse construction. You have written and presented the *Guide* with complete objectivity. You have had no axes to grind, no preconceived ideas, no commercial products to push. Your aim has been simply and only a high-minded desire to serve the educational needs of children and their teachers.

Your work has not been accompanied by the fanfare which is so common today in connection with the promotion of new ideas in school building construction. In spite of the fact that it has become fashionable to blanket the nation with glitter, not only in the field of school building improvements but also in other areas of educational investigation, you have continued on your quiet, resourceful, and practical course.

I suspect that the Council has not enjoyed the large measure of financial support which accompanies many of these forward-looking studies today. In some ways this may have been a disadvantage to you, but in others it has undoubtedly been a blessing. I am sure that your freedom from commitments has enabled you to advise us well.

The wholesale advent of large-scale foundation support in the field of education has raised some thought-provoking questions in the minds of many. I am sure that most if not all of the several hundred educational foundations allow complete freedom of determination to the recipient of their largess. There is always the possibility, however, that some such money monster may attempt in subtle ways to influence some of the fundamental policies of American education. I believe that it behooves all of us to watch and study the foundations with as much perception as we can muster.

You may well be interested in the report of a special AASA committee on foundations. This publication is nearing completion, and should be off the press before many months have elapsed. This group will convey real concern regarding the possible effect of foundation activities on American

education. The report will express a high regard for the many worthwhile activities which are being made possible by numerous foundations. At the same time, however, running throughout the publication will be a thread of apprehension lest individuals or groups utilize the tremendous potential of these large amounts of money for the purpose of influencing unduly the direction of educational thought and action.

Let me return now to my comments regarding the work of your Council. It is my sincere hope that you will continue your objective and analytical efforts to furnish assistance to all of us who have to build schoolhouses. Your integrity over the years has indeed been of great value to us. May you ever continue to serve education with this same high degree of professional dedication.

It is time for me to take up the subject which has been advertised as the theme for my discussion here. Let me say at the outset that the term "Unfinished Business," as I am using it, refers to tasks which remain to be accomplished by *all* of us in education. I do not in any sense intend to say or imply that your organization has sole or even primary responsibility for them. We all share in it. It will be reasonably clear that some of the items should be at or near the top of your priority list. In other cases administrators, school boards, teachers, and other citizens have major responsibility. The fact will remain clear, I hope, that all of us should put our shoulders to the wheel in order to achieve the needed solutions.

THE GREAT LAG

The first piece of unfinished business which I want to discuss is the job of overcoming the great lag between knowledge and action in the school building field. Like the old New England farmer, "We ain't farmin' half as well as we know how." Your studies have revealed numerous ways in which we can improve buildings but it takes a long time for these new ideas to be accepted generally. Superintendents and school boards tend to be conservative in this as well as in other areas of education. Often we *know* that a certain innovation would be a vast improvement but we don't quite dare to try it for fear of public reaction.

Let me lay bare my soul and give you a perfect illustration out of my own experience and conscience. For some time I have been firmly convinced that wall-to-wall carpeting in a school library would greatly enhance the educational uses of this space. Now, if all goes well, my school district is going to build a number of new schools during the next few years. I honestly don't know whether I or the School Board, or both, will have enough courage to specify carpeting in our libraries. It may turn out that we are too apprehensive about charges of extravagance. It is entirely possible that we will allow ourselves to be frightened off by the taxpayers. We may not have enough confidence in our ability to convince them that this expenditure would be well worthwhile in terms of educational outcome.

We administrators, I know from experience, often go to conventions, see everything that is new in the acres and acres of exhibit space, study the architectural exhibits one by one, exclaim over the wonderful new concepts, and then go home and do just what we were doing before. This is not always true but I am afraid that it happens all too often.

This conservatism and fear of change is and always has been one of the main reasons why public education has so much difficulty in keeping up with the needs of society. We must somehow muster the intestinal fortitude to build the kind of schools that you and others have conceived for us. The eye-popping achievements of recent years in science and technology, and the amazing increase in the *rate* of these developments, are making it ever more imperative that we find ways of cutting down the well-known lag between what we know how to do and what we actually do.

We in the field need a second kind of assistance in the evaluation of the relationship between construction practices and the educational program itself. We need to know a great deal more about the effects of materials and their use upon the teaching-learning process. The cry of economy is upon the land. The general citizenry, and occasionally even some of us educators, oversimplify the issues in the field of cost. Altogether too many people have convinced themselves that the only thing which makes school buildings cost so much is the unwillingness of school people to accept reasonable economy. They don't admit that it is difficult if not impossible to have an excellent school program in an unduly cheap plant. Most of this feeling, of course, stems from wishful thinking. Down deep in their subconsciousness, these critics are impelled by the feeling that if they could only prove the charge of extravagance, they wouldn't have to vote those bonds.

Again drawing upon my own experience I can tell you with regret how we lost a bond election in my own district this last spring. We were planning the construction of elementary schools for $13 to $14 per square foot, secondary buildings for $14 to $16. In spite of these modest figures, at least modest in the light of labor wage scales in the Denver area, the charge of plushness hurt us severely behind the curtains of the voting machines. Many people felt that we didn't need to spend so much money for these palaces, as they called them.

Somehow we haven't learned how to convince taxpayers of the direct relationship between good school buildings and good education. This is a public information problem, of course. It is one which we administrators and school boards are going to have to solve. You are well aware that it is becoming more and more difficult to pass a school bond issue. We shall need to have courage to say what needs to be said, show more wisdom in our public relations efforts, and draw all the help we can get from you and others in the school construction field.

FLEXIBILITY AND CONVERTIBILITY

Let me turn now to a third area where we have a lot of soul-searching to do. The new secondary school, the one which will serve the needs of people who will be living in the 21st century, will look entirely different, both physically and educationally, from the present school. Flexibility and convertibility of classrooms and other school spaces will have to be provided in new buildings.

Perhaps you haven't heard about the modern Rip Van Winkle who went to sleep in 1942 and didn't wake up until 1962. Walking down the street he saw the Falcon and the Corvair, the Hillman and the Renault.

The big jet flashing overhead in the stratosphere opened his eyes still wider. The newspaper headlines said that a man had gone around the world six times between morning and evening. So finally he went to visit the town high school. "Ah-h-h," he said, "here is something which I recognize! *This* hasn't changed." This story is full of truth as well as humor. The American high school has changed but little in recent decades, either in physical facilities or in curriculum and teaching methods.

The old order changeth, however. There is a ferment of new ideas in secondary education. Many educators and architects are rebelling against the egg-crate construction of yesteryear. The central corridor flanked on either side by a series of uniform classrooms is proving much too restrictive for the education which students need for today and tomorrow.

The rigidity which has characterized class scheduling is likewise under fire from people who are thinking through the challenges of modern education. Many of us are realizing that there is no good reason why every subject must be taught for 45 or 50 or 55 minutes every one of the five days of the week. We are taking a second look at the rigid uniformity which has been dictated by the Carnegie unit and the American college and university.

New and better ideas are coming to the fore. High school people are learning that different teaching-learning activities can best be carried on in groups of varying size. Team teaching is a fine example of this refreshing approach. Not by any means do I hold that team teaching is a panacea for all of our ills in the high school. I do think that it contains the germ of an idea which we would do well to study further.

Variable class size and different types of activities are leading us to classrooms of different sizes. We are going to need large lecture rooms, medium size classrooms, smaller seminar rooms, and some individual study cubicles. We haven't been doing enough in the development of independent thought and action on the part of high school students. Too many of them graduate and go to college without having any idea how to organize their

own time. In high school they are herded from one class to another without any option on their part. Some of these young people are capable of managing their own study and research time. We ought to be providing some encouragement for them to do so.

There are many new mediums of instruction, of which television is only one. Teaching machines will undoubtedly make a contribution to the high school of the future. I am sure that neither television nor teaching machines will solve the whole problem. Nothing can replace the human teaching-learning relationship.

Foremost among the considerations governing high school construction in the coming years must be the principles of flexibility and convertibility. We must not allow ourselves to build rigid spaces which can't be adapted to future needs.

OPTIMUM SIZE FOR SCHOOLS

A fourth open question is that of the relationship between the physical size of a school and the process of education which goes on within its walls. As yet we don't know enough about the effects of size on children and teachers. Every district has its own ideas about optimum, minimum, and maximum enrollments. Most if not all of these concepts are based entirely upon subjective judgment. As for myself, I think that an elementary school ought not to contain more than three classes of each grade, but I have no evidence whatever to substantiate this bias.

As school district reorganization spreads over the nation, and it is doing so with increasing speed, more and more districts are having to face this question and decide how large to make their buildings.

A host of questions need to be answered. At what point does an elementary school become so big, so institutional, that it exerts an undesirable psychological effect on small children? When do you reach the point where cost savings cease? What about the relationship between the size of the school and the cost of transportation? What is the optimum size for economical administration? What additional auxiliary facilities should you provide as the building becomes larger and larger?

I know for a fact that I am fumbling blindly with this question of desirable size. Because I am uncertain about it, my Board of Education and my district are not getting the professional help they are entitled to expect from me. Many conversations with other administrators prove to me that most of them are in the same boat. This does not excuse my failing. It simply points strongly to the need for more and better research in this area. This might be a problem to which you people could profitably devote more attention in the future.

The increasingly complex mechanical components of the modern school give us the fifth test of our analytical ability. Year by year the new school becomes more and more like a big machine. It has been said that the percentage of construction cost devoted to the mechanical and electrical contracts is steadily increasing. Once the normal ratio was about 25 percent, but now it is not unusual to find 35 percent or more.

The more machinery we have, the more there is to go wrong. The custodian of today's school needs to be an engineer in order to run all of these machines. When they break down, the educational process is often retarded, or even actually interrupted. Teacher morale suffers, and our public relations deteriorate.

Recently Ernest Kump raised the question whether our buildings are becoming aesthetically sterile machines. Are we creating a Frankenstein by allowing our new structures to become more and more complex? I submit this as a question on which you might help us.

Also on the list of unfinished business is a sixth problem, that of educational specifications. All too few of us know how to prepare them. We subscribe glibly to the theory that the first step in the building program is to write these ed specs. Yet we hardly know how to do it, and the mere thought of sitting down to tackle it frightens the life out of us. As a result architects are often told to design a school of 20 classrooms, with an all-purpose room, administrative suite, and cafeteria. From then on we have to hope that the architect is a student of education or can by some feat of clairvoyance figure out what the school ought to be like. Usually the outcome is a strictly conventional, unimaginative, and pedestrian type of structure bearing little relationship to the educational activities which should go on inside of it.

Perhaps your organzation could help us to chart this important preliminary phase of the school building program. We need to know the kind of a philosophical statement which an architect needs to study before he begins his preliminary sketches. It would be of great assistance if a publication could also remind us of the things which should be included in these specifications. Suggestions as to the method of organizing the material would give us another bit of much needed help.

I am sure that you, of all people, appreciate the urgency of the need for improvement in this area. Architects must not be expected to be educators, and we school people certainly should not set ourselves up as design experts. If the construction of a building is to be accomplished as an effective and efficient team effort, which it must be, the ground rules must be clearly set forth in advance. This is where the educational specifications come in.

LONG-RANGE PLANNING

Number seven on my list of jobs yet to be accomplished is long-range planning. In these days of mushrooming urban and suburban population growth it is becoming ever more imperative that advance thinking be applied to the location of schools in the future. All over the nation, one can see regrettable evidence of lack of this foresight. Schools whose attendance areas are split by arterial highways, schools located in one corner of their district, and schools that simply do not fit the pattern of community growth, are mute testimony to the absence of adequate prior analysis of population and traffic trends.

Lest I overestimate the gravity of the situation, let me hasten to say that long-range planning is being practiced more and more as the years go by. There are encouraging examples everywhere of fine cooperation between city, county, and school district leaders. Joint planning commissions are being established to forecast real estate developments, land use patterns, rate of population increase, zoning trends, and traffic plans. Occasionally one finds a planning consultant with professional training serving all governmental units in a given geographical area for purposes of coordination.

All of these developments are to the good, of course, but there are still too many school boards, superintendents, city councils, and other governmental bodies, who are living each year as it comes, with little if any thought for the future.

The heavy cost of purchasing school sites at the last minute is another very cogent reason for advance planning. Most of us have had the experience of seeing real estate values, or perhaps I should say prices, skyrocket within a period of a few months or years. Some of us have been compelled to pay staggering sums per acre for school sites that we simply *had* to have, and which we could have purchased for a small fraction of the price if we had had sufficient foresight. I should like to suggest that your Council give thought to the possibility of giving us more help and advice regarding this urgent need which we face.

Another school building issue which I want to discuss with you is that of civil defense. For boards and administrators this is a most puzzling question, fraught with a high degree of controversy and emotion on the part of many citizens. Frankly, we don't know what to do with it.

On the one hand, we shudder at the prospect of a nuclear attack and its probable cost in terms of the lives of children. As we pursue this line of thinking we can easily rationalize ourselves into believing that we simply must in all conscience provide underground shelters and all the rest of the gadgets advocated by the scare-headed people. Perhaps after a period of more mature thought, however, we wonder whether it is wise to train

children on the basis of the implicit assumption that we are going to have an all-out holocaust. Are we justified in letting them grow up with this awful outcome in the back of their minds every day of their lives?

We also speculate with deep discouragement on the cost of such massive projects in connection with existing school plants. Where could we find the money when we have to struggle hard to get enough to meet minimum building needs?

The federal government would have the schools carry the ball in a nation-wide program of fall-out shelter construction. Despite the fact that no one in his right mind believes that the entire population could be positively protected from radiation fall-out, the Defense Department advocates the construction of fall-out shelters in every American school. The cost of this program would indeed be back-breaking, on top of the burden of finding funds for new classrooms.

Yet many superintendents and school boards find themselves squarely in the middle, between those excited people who insist that steps be taken to put all school children underground in the event of an emergency, and the citizens at the other extreme who protest bitterly against the spending of a single tax dollar on this vast program.

Someone, perhaps the National Council on Schoolhouse Construction, could conduct an unprejudiced and definitive study in this highly controversial field. This job would have to be done by an organization which is well-known and highly respected for the integrity of its findings. It would not be an easy task. Many would be the screams, whatever the recommendation. A real service could be done, however, to public education and to America by the accomplishment of an analytical study of this kind.

SCHOOL DISTRICT REORGANIZATION

The last task I want to discuss, and one which we cannot neglect, is a study of the effects of school district reorganization. In Colorado we are up to our necks in this revision and improvement of school organization. In the last thirteen years we have reduced the number of school districts in our state from over 1,700 to less than 250 which actually operate schools. Even as recently as 1957 we had 900. This trend is observable throughout the nation. We are rapidly removing one of the biggest obstacles to good education, the small and inefficient school district.

Our experience in Boulder County is a good illustration of what has been happening in our state. Until a year ago there were twenty-nine school districts in the county. In January, 1961, the people voted to consolidate these units into two districts. Three years ago in the city of Boulder we had 5,700 students enrolled in our schools. Today, after being joined

with thirteen other districts, our pupil roster includes 14,000. By 1967 we will have 20,000. I tell you this in order to point up a problem or challenge, which faces us in our district, and which confronts school people all over the nation. As school districts become bigger and bigger, and enroll more and more students, there is inevitably a trend toward bureaucracy, toward greater institutionalizing of schools. We are in danger of losing touch with the individual student and with the individual teacher. Bureaucracy will come all too easily. These hazards are very real, and could result in some great losses of quality in education, which might in the worst of circumstances more than counterbalance the benefits achieved through consolidation. We must learn how to gain the advantage of more efficient organization without losing the human touch with children and with each other.

This is a problem primarily for those of us who work in education at the community level. I point it out to you tonight because our success or failure in solving it will reflect strongly on the education of children, and on the planning of the buildings in which they go to school.

In conclusion, I ought to admit that I may have overstated the pessimistic approach to the school building situation. In my search here this evening for perfection in this important area I may have set my standards too high. Of what avail are standards, however, unless they are high, even so high that they seem at the moment to be impossible of accomplishment. Only through continual striving for better and better results in bricks and mortar, and in the educational utilization of them, can we bring about these and other needed improvements.

Over the last three decades your Council has given us yeoman assistance in the planning of school buildings. Much of your help has been in areas which I have discussed here tonight. My plea is for your best thinking to continue to guide us for many years to come.

It has been a real pleasure to enjoy your hospitality and to talk with you this evening.

REPORTS ON THE UTILIZATION OF THE SCHOOL PLANT

"THE EXTENDED SCHOOL YEAR"

C. W. McGuffey
School Plant Section
State Department of Education
Florida

"COMFORTABLE CLIMATIC CONDITIONS IN SCHOOL BUILDINGS"

W. D. Foutz
Oklahoma Public Schools

THE EXTENDED SCHOOL YEAR

C. W. MC GUFFEY

A recent poll made by one of our leading magazines on school administration asked school administrators the question "Is it your observation that attacks on public schools are on the increase?" Forty-eight percent said, "Yes"; forty-five percent said "No"; and seven percent had no opinion.

One of the significant facts coming from this survey is that the general public, not organized opposition, says the schools are spending too much money. One can understand the taxpayers' concern when it is known that public school expenditures practically doubled from 1951-52 to 1958-59, and tripled from 1947-48 to 1958-59.

This country faces the problem of finding enough tax dollars to provide for a doubled college enrollment in the next eight to ten years, approximately a five million increase in high school age pupils by 1975, and about an eight million increase by 1975 of elementary age pupils. By 1980, the 5 to 17 age group is expected to reach 68 to 75 million, which is 21 to 28 million more than estimated for 1962. Thus it is readily seen that the growth of our school age population will continue to be a major factor in the cost of schools in the years ahead.

Costs, too, will continue to rise. According to a statement by the Research and Policy Committee of the Committee for Economic Development, if our resources per pupil are to be held constant, and prices in our economy stable, the costs of public schools will increase 47 percent from 1958-59 to 1969-70. The two big factors causing this rise are teacher salary increases to keep pace with earnings of other occupations, and the need for facilities to house growing school enrollments. This assumes no improvement in the quality of education. To improve the quality of education and to meet the needs for more highly developed skills, more technical information, and greater understanding on the part of every citizen will cost even more money. It seems quite obvious that if educational programs in our communities are to be better in the future, more money will be needed.

PANACEA OFFERED

Suggestions come from various groups as to how the teacher and school building shortage can be solved. Parents who want broader and better educational opportunities for their children, hardheaded businessmen who work for efficiency and economy in their own operations, and legislators

who must find ways to raise tax dollars, look askance at school buildings standing idle during the three summer months.

Cries of teacher shortage and low teacher pay schedules fall upon many unsympathetic ears, for teachers seem to work only nine or ten months of the year. Better utilization of existing school buildings, as well as teacher personnel, by year-round school operation or extending the school year seems a panacea for saving tax dollars and achieving a more adequate education program.

Several reasons seem to make a lot of sense to the groups I have mentioned. Why?

1. The school plant is available, fully equipped and ready for use. Why should it stand idle three months? To follow such practice in business would mean bankruptcy.
2. Most overhead costs would continue to be the same whether the schools are open or closed during the summer months.
3. Fixed charges, such as insurance, interest, and capital outlay costs remain fairly constant, whether schools are open or shut down.
4. A teaching staff is already employed. They want higher salaries, yet only work 9 or 10 months of the year.
5. Most youngsters of school age, particularly in our towns and cities, are without constructive direction during the out-of-school months.

In many areas of our country, school districts have exhausted their bonding capacity, and despite their efforts to keep pace with enrollments are finding themselves facing up to the question, Where is the money coming from to get the job done?

Pressures from parents to avoid half-day sessions and the belief on the part of both laymen and educators that the traditional school calendar needs re-examining have led to further consideration of what appears to be a solution—year-round school operation.

TYPES OF PLANS TRIED OR PROPOSED

Year-round school operation is not new. Most of you are familiar with the historical development of our present school calendar.

You will recall that before 1840 the school calendar in cities like Buffalo, Baltimore, Cincinnati, New York, and Chicago ran close to year-round, while during our earlier history most of our schools were geared to the existing agrarian economy. By 1915, however, most of our schools operated on a nine-month basis. As late as 1944, Illinois ran 186 days and

Mississippi ran 148. Most states now average 170 to 180 days in the school calendar.

Several types of year-round plans have been tried or studied during the last fifty to sixty years.

1. The Four-Quarter Plan.

This plan has also been referred to as the staggered quarter system. The primary purpose of this plan is to save money. The school year is divided into four periods of about equal duration, usually twelve-week periods. The student body of a given school is divided into four groups, with each attending school for three quarters. Children would still spend 180 days in school, as is now the usual case.

The four-quarter plan has been the most studied and the most tried of all the proposed plans. Bluffton, Indiana, placed the plan in operation in 1904, but discontinued it in 1915. In the 1920's more than a dozen schools were operating on this plan, but by 1950 only Chattanooga remained on it. Two of the better known experiments are those of Ambridge and Aliquippa, Pennsylvania.

This plan has been studied by such cities as Los Angeles, California; Fairfield, Connecticut; Atlanta, Georgia; Redwood City, California; Sacramento, California; Dallas and Houston, Texas; Cincinnati, Ohio; Newark, New Jersey; Cleveland, Ohio; and possibly others. In so far as could be determined, the plan is not in effect anywhere in the nation at this time.

The advantages and disadvantages were reported to be very similar in most of the foregoing cases.

Advantages:

1. Building shortages temporarily relieved.
2. Greater utilization of school facilities achieved.
3. Acceleration of students is made possible.
4. Failing pupils can repeat work during vacation period.
5. Some savings are reported, although not all studies and experiments have shown that savings can be effected. The Aliquippa, Pennsylvania, experiment produced savings.
6. Teachers may work the year around, thus increasing their salaries and reducing the need for teachers.
7. Achievement of pupils reported indicates favorable comparisons with that under the nine-month plan, although Aliquippa reported a letdown in work during the summer session.
8. Fewer textbooks needed at any one time.

Disadvantages:

1. Parents object to arbitrary assignment of vacation periods and to vacations other than summer.
2. Maintenance and repair of buildings is impossible without interference with school work.
3. Plan will not work advantageously in elementary schools with less than four sections to the grade and in small secondary schools with less than four sections of a standard course.
4. Omaha reported the plan cost too much. Studies in Atlanta, Georgia, and in Florida concurred in this.
5. Difficulties were reported in the placement of transfer pupils.
6. Increased cost of maintaining the plants was reported.
7. Administrative problems and supervisory tasks were greatly increased.
8. Nonacceptance by the general public.
9. More transportation would be required in the beginning.

2. Five-Term Plan.

This plan was developed by a study committee in Tucson, Arizona. The committee studied the four-quarter plan and an eight-unit plan. Both were rejected by the group in favor of the five-term plan. The student body is divided into five groups and attends four of the five periods of instruction set up in the plan. Terms proposed are from 47 to 49 days in length, providing a minimum number of 190 teaching days for any one student. Credits would be in semester hours, using instructional periods of roughly twenty weeks each.

Advantages:

1. Provides an estimated 25% increase in plant capacity with buildings in use fifty weeks of the year.
2. Instruction and maintenance costs per building unit will increase 25%, but the increase in students accommodated will also be 25%.
3. Estimates indicated four to five percent increase in per student general cost, although fewer schools will have to be built, thus an overall saving may be possible.
4. Number of teaching days is increased over the present.
5. Proposed schedule conforms reasonably to present college and university schedules.
6. Acceleration is possible under the plan.
7. Failing students could make up work during the vacation period.

Disadvantages and Problems:

1. Once a student is assigned as a member of a group, he would be bound to the schedule of taking vacations at a fixed time each year. This is no different from all such plans.

2. Realignment of attendance districts would be a real problem.
3. The chief problem is selling the idea to the community. However, this plan seems to interfere less with the status quo than other such proposals. Acceptance of revised attendance areas, staggered vacations, and rather arbitrary assignments to groups would be difficult to obtain.
4. All members of the same family would have to be on the same plan to avoid different vacation periods for them.
5. Five sections of each elementary grade and of each standard high school course would be necessary. This plan would not work in areas having small elementary and secondary schools.
6. In many areas of the country, existing and new school plants will have to be air-conditioned, which will cost money.
7. Summer enrichment and recreation programs will have to be modified.
8. Scheduling of normally small classes would present a problem.
9. Maintenance and repair of buildings would present some problems. Major repairs would have to be done on a crash basis.

You may be interested to know that a poll of citizens in Tucson District 1 turned this plan down when it was presented to them in May, 1961. Of 3,103 polled, 2,761 said "No." At least 80% of the objections were to a compulsory summer schedule for their children.

3. The Trimester Plan.

In so far as I have been able to determine, there are only two cases in the country where this plan is in operation—Florida High School, Tallahassee, Florida and Tallulah Falls School, Georgia.

The Florida High plan divides the calendar year into three equal terms of 75 days each, called a trimester. School will be in operation 225 days. Each child in the K-8 structure is required to remain in it eight years and attend school a minimum of twenty trimesters during this time. Under the traditional plan a pupil would attend 1440 days in the eight years, while under this plan 1500 days is required.

Credits at the high school level will be in trimester units, each unit carrying a half-year credit. The length of the class period is increased so that in 75 days the teacher-student contact time will exceed that now possible on a semester basis. Some pupils in the 9-12 structure could enter college after nine trimesters. Any student at any level must attend two consecutive trimesters. This plan is in its first year of operation at Florida High School, the University School at Florida State University. A similar trimester plan is proposed for the Nova High School, Fort Lauderdale, Florida, when it is placed in operation in the near future.

Advantages:

1. The trimester plan makes possible curricular innovations geared to the individual pupil's achievement and rate of achievement.
2. For socially mature, gifted students, acceleration is possible within limits at the high school level.
3. Additional time is made available beyond the traditional 180 days, permitting additional emphasis on basic studies without taking time already allotted to other purposes.
4. The school plant is utilized eleven months of the year, thus saving capital outlay.
5. Pupils will not be forced to attend school every summer, although to meet attendance requirements they will have to attend some summers.
6. Requires fewer teachers, thus helps relieve the teacher shortage.
7. Teachers may teach year-round at higher pay.

Disadvantages and Problems:

1. No information is available on the cost of operation, although it would appear that there will be extra costs for operation.
2. Extra costs are involved in air-conditioning existing buildings.
3. Transportation will have to be operated year-round with the possibility of increased costs.
4. Building maintenance may become a problem.
5. Increased administrative and supervision problems are expected, involving transfers of students, scheduling of enrichment and extracurricular activities.
6. Plan will not work favorably in elementary schools with less than three sections to the grade or in secondary schools with less than three sections to the standard high school subject.
7. Offering subjects usually taught in small classes will pose a problem to schedule.

4. Voluntary Summer Plan.

This is the most common form of year-round school operation found in use. Pupils attend the regular school term for the required number of days. The summer program is on a voluntary basis with pupils attending from 6- to 12-week programs. The program provides opportunities for remedial work, acceleration, or enrichment. Many schools offer recreational and physical education activities as well.

This program costs more, of course. The plan offers broader educational opportunities to youngsters who need or desire them, without disturbing the status quo. It does not do all that the proponents of year-round schools for economy's sake are seeking.

5. Other Plans for Public Schools.

There have been other plans proposed, such as the double session with summer enrichment plan, the eight-unit plan, and various combinations of the foregoing. Advantages and disadvantages are similar to those already described.

6. College and University Plans.

This report does not cover plans being considered or in use at the college and university level. This is a different problem, and there is much more real experience on which to draw at this level.

The State University system in the State of Florida began operation on a trimester plan this fall. This was brought about by a supplementary appropriation provided by the 1961 session of the Florida Legislature contingent upon "the full implementation of a trimester or four-quarter plan." Many were convinced that to provide an opportunity for all to attend college who ought to attend would depend in part on the fuller utilization of existing and new facilities.

A task force committee on the year-round operation of Florida junior colleges has studied the problem. It is my understanding that this committee will recommend to the Florida Legislature that legal changes be made to enable junior colleges to offer year-round instruction. The proposed plan varies from the university trimester plan because of the unique position of the junior college program. The task force committee believes that the junior college must articulate with the secondary schools, yet not inconvenience students who may transfer to the university system. Complete details of this plan are not yet available.

CONCLUSIONS

Purposes for year-round school operation seem to vary. The predominant purposes in most cases reviewed by me are to make fuller utilization of physical facilities and to reduce overall costs. Case studies point to examples where a few plans have operated successfully over a period of years.

A less well documented purpose is to strengthen the quality of the educational program to more nearly attain the long-standing commitment of American education; i.e., to provide equality of educational opportunity and to develop to the fullest the talents and abilities of individuals, not only for the individuals' sakes but for the benefit of our national purposes.

European education has been referred to in many debates on the successes and failures of American education. European schools, for the most part, provided from 220 to 236 teaching days a year. The results these

countries achieve in efficiency and in the conservation of human time may be worth further consideration by us. Even Red China, which is committed to provide elementary and secondary education to every student of normal capacities, provides more hours of instruction than we on many subjects in their secondary schools. A good illustration is the 485 hours spent by youth on physics, as compared to about 385 hours in most high schools in the U. S.

Our schools, to do the job to which we are committed, need more time, and more money. The idle physical and human resources at our command should be utilized effectively for the full realization of the best educational system known to man. It is my conviction that an extension of the regular school year, with concomitant changes in curriculum and school organization, adequately financed, can help to accomplish this.

COMFORTABLE CLIMATIC CONDITIONS IN SCHOOL BUILDINGS

W. D. FOUTZ

First, I would like to make one observation—we do not want to leave anybody with the impression we are trying to send students to schools to be in a "lush" environment and therefore, I would like to offer the use of the words "learning environment" when associated with climatic conditions for school buildings. I want to review a little history and formulate your idea on how the climatic conditions in school building have existed in our country, practically from its beginning.

Let's think of the theme for this meeting, "Utilization of the School Plant and the Educational Program." And let's consider how our school plants may be used in a community in our day. As well as housing our regular students for the learning program from kindergarten to grade 12, let's list some of the other functions for which this school plant will have to provide facilities in the future.

1. Adult education and rehabilitation
2. Summer enrichment programs
3. Extended school year
4. Junior college programs
5. Area libraries
6. Civic activities as needed
7. Community usage
8. Local organized groups such as PTA
9. Regular after-hour school activities, sports, plays, dances, swimming meets, et cetera
10. Pre-school teacher training
11. Emergency usage—floods, tornadoes, et cetera

Utilization of school plants is ever increasing from a nine-month term to a twelve-month term and even extending to twelve-hour days. In all parts of the country, summer school enrollment is increasing. In Oklahoma City our summer schools enrolled 4,592 students in 1962. This represents a 100% increase in three years.

Now with these thoughts before you let's start our tour through history, concentrating on learning environment conditions in school buildings, and realize this cycle was not necessarily typical but that it did occur in these United States.

Mr. Foutz showed a series of slides to the audience. What follows is a redaction of his commentary.

Shortly after America was discovered, our ancestors began to develop school plants. Originally slots, rather than glazed windows, allowed ventilation and some outside lighting. Needless to say, the foot-candle level was low, and thermal conditions were controlled entirely by the amount of logs burning in the fireplace and the distance from the fire. Foot-candles were controlled by the distance the students were from the candle or slotted windows.

It's interesting to note the tremendous progress made by 1845. The classrooms are larger, tables and benches have been added, windows have been glazed, and of course, there is a movable sash to control the heat and ventilation requirements. At this time the students worked out of one or two books per year.

By 1875 the quality of construction was at a high peak: stone buildings with stone fences, lightning protectors, lifetime tile roofs, high movable sash, and wood burning fireplaces. Foot-candles were supplemented with coal-oil lamps when required. Along about this same period American manufacturing was getting established. Again thermal environment was controlled by the distance from the heat supply and the amount of burning

wood or coal. Lighting was still dependent upon "Ole Sol" and the coal-oil lamp.

Considerable advancement was made in the next thirty years. Inside toilets were becoming a reality. Manufacturing was booming, transportation was becoming better. Huge fans were installed to provide ventilation. Outside air was mixed in a large plenum and warmed by large steam coils. Exhaust air was ducted to the roof. Electric lighting became a reality; light levels of five to ten foot-candles were becoming standard.

The people of this time did realize the need for better climatic conditions. Though the price per square foot for the mechanical installation was high, the public paid the bill.

In the surge of school building that followed World War I, much progress was made in improving thermal conditions in the classroom. By 1929 the unit ventilator was the accepted standard. Even with this knowledge the depression years caused a downgrading of mechanical systems, and unit ventilators were replaced with convectors along the outside walls. The postwar years brought a new crop of designers who had not been exposed to the experience of good thermal control, but rather were pointed in the direction of "economy at all costs." Radiant heating spread through the nation, and because the students seated along the outside walls were chilled by the "cold wall," a combination of radiant and convection was used.

These layouts greatly affected the school-plant building orientation. Prevailing winds dictated layouts, and long, low "finger plans" with single loaded corridors were popular. Cross ventilation with clear-story movable windows for lighting was developed. More attention was concentrated on the "cold floor," the effects of infiltration, and the "cold wall." Convectors were added to overcome this effect. With stagnant air and body odors still a problem, costs were analyzed and we realized we were spending as much money as we could on unit ventilators, without the advantages. As a result we worked back to the level where we were thirty to forty years before.

There are very few buildings where we have a higher concentration of people than in schools. Educators say they would like a pupil-teacher ratio in a classroom of thirty to one, but in many cases we have even more than this. These thirty students will give off between 9,000 and 20,000 BTU's of heat per hour, enough to heat a normal five-room house when it is 32° outside. There is also a tremendous sun gain depending upon the type of windows in the building. This can range up to thirty-five thousand BTU's per hour. The lighting load can add a considerable number of BTU's. This heat must be dissipated if we are not to overheat the classroom.

We have been trying to cool classrooms with outdoor air through mechanical ventilation. This is effective only when the outdoor temperature is

below 60°. Above 60°, we must use mechanical refrigeration to attain and maintain the proper climate.

We went to the U. S. Government figures on climatological data to determine what percentage of the hours the classrooms are in use when the outdoor temperature is above 60°. We found some very interesting figures. In Los Angeles mechanical refrigeration is needed 86% of the hours. In other words, hardly a day goes by when mechanical refrigeration is not required if proper conditions in the classrooms are to be maintained. In Washington, D.C. mechanical refrigeration is needed 44% of the time. And in Minneapolis—up in the cold north country—nearly 25% of the school year is less effective if a school has no mechanical refrigeration. In Dallas, it's needed 62% of the classroom hours—well over half of the school year. In Tampa, the percentage is 93%. In Jacksonville, Florida, 83% of the classroom hours are above 60°. In Miami, 98% of the classroom hours are above 60° and are overheated invariably if the classrooms do not have mechanical refrigeration. In Chicago, 32% of the classroom hours are above 60°. In St. Louis 43%, and in Cleveland, 34%. Mechanical refrigeration, then, has *always* been needed in schools throughout the country to obtain the maximum benefit from education the entire school year.

What is air conditioning? The ASHRAE defines it as "the process of treating air so as to control simultaneously its temperature, humidity, cleanliness and distribution to meet the requirements of the conditioned space."

It is interesting to note the Federal Government handles air conditioning through the General Services Administration as follows: Whenever the Design Effective Temperature is above 80°F., buildings housing government employees must provide air conditioning, whether owned or rented by the government.

Denver, Colorado is supposed to be in the area of less than 80°F. D.E.T., yet how many buildings have you been in here that are not air conditioned?

We then find here the Federal Government requires air conditioning in their buildings and the inside design conditions are 78°F. d.b. 45% relative humidity. The air quantity required is 1½ air changes per hour or 15 CFM per person, whichever is greater. Outside air must be provided as related to the specific conditions. As you well know, different areas require different amounts of outside air to dissipate smoke fumes, dust, et cetera. Chapter VIII of the NCSC Guide is devoted to Service Facilities of which heating, ventilating and air conditioning is a part.

The first paragraph states: "An uncomfortable thermal environment may be fatiguing and distracting to the student; therefore the maintenance of the proper thermal environment is an important factor in the most productive use of teaching time."

The proper thermal environment in a school building is:

The supplying of heating or cooling to balance heat losses or heat gains from the room to the outside.

The operating conditions in schools are as follows:

A. Classrooms, auditoriums, offices, cafeterias, 70°F. measured 30 inches above the floor.

B. Closed corridors, stairways, shops, laboratories, and kitchens, 68°F. measured 60 inches above the floor.

C. Activity rooms such as gymnasiums, 65 degrees F. measured 60 inches above the floor.

The maximum temperature gradient from floor to 60 inches above the floor should not exceed three degrees. We should design our buildings for the year-round environmental control optimum of 74°F, 75°F., or conditions relative to the area. We recommend, for removal of body odors in areas where no special odor sources exist, as in classrooms and libraries, a minimum of 10CFM per person. The total quantity of air naturally will be selected on the basis of heat or cooling loads involved.

Let's take a look at what happens to the school dollar. For every $100 spent, 80% goes for salaries. This leaves $20.00 for everything else. Half of this goes for books and supplies, which leaves only $10.00 for building construction and operation. Now lets take this 10% and break it down, and we find that only $4.00 out of the original $100.00 is left for the mechanical equipment. The amount that we would need to spend to assure the very best in thermal conditions is insignificant as compared to the total we are spending for education.

Mr. Foutz then showed the audience slides of some fixtures which are being developed to improve climatic conditions in the classroom.

The race for leadership in space has developed into a contest between our free society and communism. Trying to find our place in the competition, we may well wonder "What can I as an individual contribute to its successful outcome?" Those of us with the responsibility for leadership in the area of school building design may well decide the outcome of this competition.

REPORT OF TASK FORCE COMMITTEE ON SCHOOL LIGHTING: GOOD LIGHTING AND EFFECTIVE LEARNING

"PRESENTATION"

CHARLES D. GIBSON, N.C.S.C.

"COORDINATED DESIGN: THE ARCHITECT'S ROLE"

HENRY L. WRIGHT, A.I.A.

"I.E.S. REPORT"

FOSTER SAMPSON, I.E.S.

C. L. CROUCH, I.E.S.

J. L. CHAMBERS, I.E.S.

PRESENTATION

CHARLES D. GIBSON

Today marks a real milestone in the history of our Council. This session officially brings to a successful close our first major venture as a co-sponsor of an American Standard Guide for School Lighting in cooperation with the American Institute of Architects and the Illuminating Engineering Society. Leaders of these two other national groups are present here today to join our working committee of Bill Clapp, Ray Hamon, James Reid and myself to present the new School Lighting Guide to you, the National Council on Schoolhouse Construction membership.

At this session we want to give our visitors and fellow Task Committee members the major portion of the generous time allotted for our presentation. You have had and will, I hope, have again ample opportunity to hear from the National Council members of this joint effort.

Beginning at Allentown, Pennsylvania last April, Henry Wright, John Chorlton, Cash Crouch and your speaker have appeared before Regional Technical Conferences of the Illuminating Engineering Society announcing the completion of the new American Standards Association "Guide for School Lighting" and explaining the point of view of the three sponsoring groups toward the new document.

In addition to our appearances before Regional Technical Conferences of the I.E.S. at Allentown, Pa.; Jackson, Miss.; Spokane, Wash.; San Diego, Calif.; and Albuquerque, N. Mex. we presented our story to a section meeting of the St. Louis convention of the National Association of School Boards.

The Illuminating Engineering Society-sponsored tour culminated last Sept. 10 when we held a three-hour session before the general meeting of its National Technical Conference in Dallas, Texas.

The Executive and Program Committees of our National Council generously set up a full half-day general session for our school lighting presentation today. This indicates the serious attitude our National Council leaders have assumed toward our sponsorship of the new American Standards Association Guide. It is the fervent hope of all who have worked so long to create this document that the total membership of our Council will assume this same serious attitude. In your speaker's opinion, school lighting design in our countries would be vastly improved at no additional cost if the National Council membership at large would put into practice only the minimum recommendations presented in the A.S.A. Guide.

For my presentation today I intend to tell you essentially what I told the National Technical Conference of I.E.S. in Dallas last month. To some of the older members of our Council I may be repeating ancient history, but I'm sure many of the newer members, and certainly the most recent additions to our group, will find most of my remarks contain information new to them.

The National Council on Schoolhouse Construction was organized in 1922. The purpose of the organization and membership requirements are set forth in our by-laws as follows:

To engage in those activities designed to stimulate improved procedures and conditions for the planning of better school plants including: the exchange of ideas and practices; the professional growth of members; the stimulation of needed research and the assembly, evaluation, and dissemination of existing research studies; the encouragement and improvement of professional training programs in schools of education and in schools of architecture; the encouragement of school plant divisions in state departments of education; the promotion of long-range planning; the functional planning of specific school plant projects; and the promotion of economy of construction.

MEMBERSHIP

1. Persons meeting one of the following classifications are eligible for membership in the Council:

(a) Federal, state, and local school officials and employees whose duties are primarily concerned with school plant programs and planning school facilities.

(b) College and university staff members who teach school plant courses, direct school plant planning and research, direct or conduct school plant surveys, or render school plant consultant services.

(c) Editors of educational and architectural periodicals regularly devoting considerable space to school plant problems.

The membership of our organization touches to some degree the great percentage of all schoolhousing design in the United States today.

Prior to 1946 the National Council published some sketchy "standards" for school construction in its Annual Proceedings. In 1946 our Council prepared and distributed its first "Guide for Planning School Plants."

The change from publishing "standards for design" to publishing a "Guide for Planning" was far more than a semantic maneuver. It involved a new concept born from the extended experience of Council members—that most school building design is the result of planning compromises made

necessary by shifting factors in each specific planning situation. A "standard" infers one desirable solution on a black and white basis in a planning world filled with "grey areas." When, for some reason, a standard is unattainable, it offers little, if any, help in determining the next best solution.

We rejected the restrictive concept of the word "Code" and accepted the broader concept of a "Guide." In our opinion codes represent known solutions to past problems. By freezing the essence of known solutions to past problems into basic design documents, we automatically put a strait jacket on our ability to solve future problems. We inhibit our own technological competence and stifle creativity.

Our Council membership was convinced that any sound planning or design document must include basic information to which the elements of *judgment* and *choice* could be applied in determining the best possible solution for each varying problem.

Our 1946 "Guide" also included the first published concept of a "balanced visual environment" for school design. The design goals are as valid today as they were in 1946, although more recent research, particularly in the field of reflected glare, broaden the scope of recommended visual design factors.

Revised editions of our "Guide for Planning School Plants" were published in 1948, 1952 and 1958. An expanded edition of our "Guide" is now in the hands of an editing committee and should be off the press in 1963.

As National Council membership further analyzed the concept of a balanced *visual* environment, we expanded the idea to include balanced *total* environment. This idea became popular as school building needs continued to exceed available school building dollars. If all the funds necessary to create an ideal physical plant for educational purposes were not available, what design factors should be given priority in the hot competition for limited construction funds?

Here again judgment and choice needed to be applied to each problem. Since our organization is committed to the idea that the physical environment is an integral part of the educative process, our judgments and choices relative to a priority use of limited funds led us to the conclusion that the building design factors that contributed most to the teaching-learning processes were the ones to be assigned top priority for school building budgets. These factors we termed spatial, thermal, visual, sonic and aesthetic. Not only should these five basic design factors receive top planning priority, but they must be considered both as separate and as inter-related elements if a good overall building design solution is to be reached. At the time each of these elements is being considered in terms of its specific contribution to an acceptable building, it must also be evaluated in terms of its inter-relation to the other four priority elements.

The visual factor, in school building design, then, must be planned simultaneously as a separate yet integrated environmental factor. There is no way to divorce it from its relationships with other design elements.

The school official should soon be jobless who presided over the planning of a school building that met every recommendation for a good visual environment but had undersized and poorly related space elements; was not air-conditioned; had no provision for planned sound projection and control and had the overall appearance of a cheap warehouse.

If the balancing of these five basic school building design factors is to be accomplished effectively, common planning procedures must be modified as they relate to the applied competence of the architect and structural, mechanical and electrical engineers.

Until quite recently the experience in my own shop indicated that school buildings were conceived first from the "architectural" standpoint. In our California Department of Education bureau we see between 200 and 250 million dollars' worth of public schoolhousing plans each year. Many times we are involved with architects who have been reviewing prize-winning school building designs in the architectural literature. In such cases, often the first call on limited building budgets went toward achieving some type of exotic space geometry. By the time a structural engineer had figured out how to make the building stand up, the architect and the structural engineer had used up the major part of the budget available. The "frozen plans" then were turned over to a mechanical engineer who was told to heat and ventilate it, and finally to an electrical engineer who was given the unenviable job of taking what little budget was left to provide "whatever kind of a lighting system and other electrical services you can get with the remaining money."

Fortunately today the trend is for the architect to begin planning at a conference with responsible officials, at which time priorities are determined for the expenditure of the building budget. In such cases the mechanical, electrical, and sonic consultants are brought into the planning process among the first instead of among the last. No other procedure can result in the kinds of buildings we must plan within limited budgets to serve the educational complexities of today's and tomorrow's program needs.

Now that the National Council has become an official sponsor of the ASA "Guide for School Lighting," the IES and the AIA most probably are curious to know our "intentions" toward this new document.

When the NCSC was invited by the IES and AIA to participate in a revision of the ASA "Recommended Practice of School Lighting," we set five objectives we sought in the revised document. They were:

1. To have it based upon the findings of noncaptive research.

2. To be sure it would set forth objectives or principles which would represent the best environment this research indicated for the visual comfort and efficiency of those occupying our schools.

3. To provide a document that planners could understand without highly skilled or technical competence in the field of visual engineering.

4. To provide information which would enable school planners to apply the principles of good lighting in their planning processes without dictating specific solutions to architects, engineers or school officials.

5. To provide planners and users uncomplicated, direct methods and techniques for evaluating the results achieved by any given light solution.

As you hear the remainder of this session today and then review for yourselves the newly published school lighting document, you will be able to judge whether or not the Joint Task Committee accomplished what at least the owner started out to do.

Since we make no pretense about being an engineering organization, we have been anxiously anticipating a comprehensive statement on school lighting since first the Joint Task Committee began its work. For the past nine years your speaker—as liaison officer from the National Council to the Illuminating Engineering Society—has made a report to our annual meeting on the progress of the deliberations of the Joint Task Committee. These progress reports have kept our membership aware of the status of the work on the new American Standards Association document on school lighting.

In recent years we have devoted major protions of our yearly program to a discussion of the points of agreement and disagreement between the IES, AIA and NCSC, as we jointly worked at the formidable job of forging an instrument for school lighting design which could gain the unqualified support of all three groups.

At our Toronto convention in 1960, John Chorlton and I separately and together explained to our Council the progress we were making. Last year in Atlanta, in addition to the regular liaison report, a section meeting was held to give those particularly interested an opportunity to hear from all members of our Council committee and to ask questions they had on their minds.

A part of the agreement made by members of the Joint Task Committee at one of their early meetings was to the effect that the three sponsoring groups not only would be active in publicizing and interpreting the new "School Lighting Guide" after it was published, but they also would jointly participate in a continuing field evaluation of how well school lighting design reflected the recommendations made in the "Guide."

We also agreed to use what influence we might have to promote frequent revisions of this document in order that the results of new research findings could be disseminated through it at the earliest practical time.

Your speaker's long association with local, State and Federal agencies has led him to a philosophy that has been summarized in Gibson's law which states:

"Government is more by attitude than by statute."

We cannot legislate progress—nor, indeed, is progress a product. After codes, laws, guides or what have you are established, they still must be interpreted and administered. This process is always affected by attitude.

The attitude of the National Council concerning the new ASA "Guide for School Lighting" is that it is a document based on noncaptive research prepared by men of good faith—dedicated to the improvement of the visual environment in school buildings. We will interpret and administer it with that attitude.

In closing may I say that the most important aspect of the new American Standards Association "Guide for School Lighting" is that it was prepared and approved by the three major groups most closely related to the provision of a good visual environment in schools: The National Council on Schoolhouse Construction representing the owner; the American Institute of Architects representing the building designer; and the Illuminating Engineering Society representing the designing and application engineers who must translate stated needs into guaranteed performance.

We present this new working tool to our Council membership with the hope that we will join our coworkers in the two other sponsoring groups in a united effort to improve the total design of school buildings in our countries.

COORDINATED DESIGN: THE ARCHITECT'S ROLE

HENRY L. WRIGHT

I think it was Octavias Morgan, an architect who lived around the turn of this century who said, "Architecture is the printing press of all ages, and gives a history of the state of society in which it was erected." His implication was that architecture becomes a chart of physical environment by which man can trace his cultural, social, religious, and political development. It implies also that the architect, in his professional practice, has a grave responsibility for this environment . . . not only to his client, but to history.

The profession of architecture has recognized its responsibility by setting high standards of competence for those who practice it. The educational background of an architect includes his use of the "tools" of his profession, such as training in design, studies in history, mathematics, science and the various engineering disciplines. In addition, he is also instructed in the sociological and psychological needs of man. After graduation, learning continues through practical application of his academic studies by internship with a practicing architect. This is how he learns to combine theory with practice. This background of education, training, and experience prepares the budding architect to be examined for registration to practice, that permits him to embark upon a professional career. The minimum time required for such preparation in most states is eight years. However, in many cases it will be nine or ten years before he acquires his license. After registration, his first step is to participate in his professional society, the American Institute of Architects,. Here, he joins others who are dedicated to establishing and maintaining high standards in the professional conduct of their membership in the "public welfare and the good of mankind."

One hundred and five years ago, a small group of architects met together in New York City and made the first plans for professional cooperation by establishing the American Institute of Architects. Out of these early meetings came a statement of the high purposes and objectives of our professional society. This statement reads:

> ". . . to organize and unite in fellowship, the architects of the United States of America; to combine their efforts so as to promote the aesthetic, scientific, and practical efficiency of the profession; to advance the science and art of planning and building . . . to coordinate the building industry and the profession of Architecture to insure the advancement of living standards of our people through their environment; and to make the profession of ever-increasing service to society."

About nine years ago, architects designing schools, and members of your Council, became concerned with the standards of classroom lighting.

The document most generally used by architects and engineers was "American Standard Practice for School Lighting," jointly sponsored by the AIA and the Illuminating Engineering Society and published by the American Standards Association. In the face of changes and developments in lighting concepts, and improved lighting equipment introduced to the market by manufacturers, the "Standard Practice" had become obsolete, and it was being used by many people who were unqualified to interpret its text and who had no understanding of the total environment, in which lighting became only a part of the total design problem.

The AIA through its Committee on School Buildings and Educational Facilities, and the National Council on Schoolhouse Construction, initiated action by approaching the Illuminating Engineering Society with a proposal to completely revise the outmoded document by creating a task force appointed by the three organizations. Thus the three principal groups responsible for classroom visual environment were drawn together to set up requirements for classroom lighting. The work of this group has been thorough, painstaking, comprehensive, and a rewarding experience to those of us who have been privileged to participate in the production of the new document on school lighting. The resulting document is a guide in which the client, architect, and illuminating engineer can make a variety of choices within a framework of good lighting, without inhibiting creative thinking in design and planning. The complete environment of teaching spaces in relationship to illumination has been considered; this involves spatial, thermal, visual, sonic and aesthetic considerations. This is the kind of result that can only be achieved through the efforts of a task committee such as ours.

The National Council on Schoolhouse Construction representing the client and user of the facility described the visual environment that would fit his needs which resulted in a statement of the principles of good lighting. The architects established the nature of information that the document should contain to provide choices of quality and the flexibility for design within classroom areas as well as the completed school plant. The IES representatives on the committee supplied the engineering "know-how" that made the final product a practical source of guidance and information.

At our first organization meeting in New Orleans, we all agreed that if the document was to be of value to the client, architect and illuminating engineer, its recommendations must be substantiated by valid research of all the elements of the visual environment. We therefore set about to define the areas where research was needed, in other words, "research the research." The work done earlier by the Illuminating Engineering Research Institute

The objectives are simply stated, free from double-talk. They impose a serious obligation on every architect in the sense that they make him directly responsible for the environment in which his fellow citizens must live, learn, work, worship, and play.

This willingness to assume responsibility, to make the vital decisions of our profession, is the act that has made the American Institute of Architects the authoritative voice of architecture. Its membership has reached a total of some 15,000, of which only 5,000 are actual proprietors. Architecture is not the largest of our professional groups. In fact, considering the nearly limitless area in which it must function, the burdens of design, planning, and direction are carried by few indeed! It seems logical then, that the architect, who has found the benefits and rewards of cooperation in his own profession, would realize that the fulfillment of his purpose comes through leadership in achieving the cooperation of all segments of the industry and the other professional societies with which he works. The circumstances in which we find the AIA in harmonious working relationship with the National Council on Schoolhouse Construction is a demonstration of the policy that what is best is best accomplished by team work.

AIA has a formal program of liaison with some 50 national organizations representing every phase of the construction industry and related professional groups. Associations of general contractors, manufacturing groups engaged in the production of component materials, authorities concerned with the fixing of building codes, are only a few of the organizations directly identified with building and with whom the AIA maintains a constant contact.

The direct interest of the community—the user of the architectural result—is of no less a concern to the AIA. Government agencies, always present in a constantly changing scene of building activity, are a matter of prime responsibility. So too, are the various groups concerned with education and training—the technical societies—whose highly specialized activities directly affect the design of schools, hospitals, churches, industrial, and commercial structures.

The qualified architect not only designs, *he understands!* He understands the function of the building for which he has become responsible. He understands the nature and application of the various components that will best serve the purposes of the building's occupants and users. This comprehension of the needs of his clients and the things that modern science and engineering have been able to produce to meet these needs has been achieved many times through meetings such as this.

There are a number of examples in which the effectiveness of the relationship between the AIA and the National Council on Schoolhouse Construction can be cited. One example is the principal topic of this session.

and others was well-known to us, but it was not enough. We became concerned about the need for more complete information on the quality of lighting, from both daylight and electric light sources.

This concern led to a series of glare evaluations, which resulted in the scissors curve, of which you will hear more later. John Chorlton of Toronto, Canada undertook investigations on the effect of reflected glare on vision. This was followed by Finch's work on the same subject. Later, the studies of large-area glare sources being conducted at Cornell and in England were used as resource material. Comprehensive studies were made of the various tasks required of students in many grade levels in the United States and Canada. It was discovered that tasks varied considerably, both in the quality of materials used, and in the time spent in performing them. This prompted the Committee to approach Dr. Blackwell, through Illuminating Engineers Research Institute, for more data on the quantity of light required for the most common tasks. Dr. Blackwell's research revealed that a wide range of foot-candle intensities was required if students were to be provided with an adequately conditioned space in which to learn with the least loss of visual accuracy.

All of this took a long time to accomplish. The conclusions are by no means ended. In fact, the very encouragement we have received from this result of our team effort is one that impels us to continue to seek to improve our own understanding of the tools with which we work to improve the final result of our effort. No such effort is worthwhile unless it is put to use for those whom it was intended. Implementation of the Guide imposes certain obligations upon those who were responsible for its initiation and its preparation. There must be a plan of action carried on by the three sponsoring organizations, each group assuming responsibility for its own implementation.

The National Council on Schoolhouse Construction, whose interest is providing educational facilities with the best possible total environment for learning, should advise educators throughout the country of the value of the principles of good lighting which are described in the Guide. They should point out that incorporation of these principles in the design of new facilities, as well as in improvement of existing systems, is a sound investment. The American Institute of Architects has the responsibility of presenting to its membership the new Guide as the authoritative reference on classroom lighting. The individual architect should insist that his consulting illuminating engineer include in his designs the kinds of lighting systems that meet *all* the requirements of the Guide. Further, the architect should ask his consultants to remember that the visual element is an integral part of the total environment and that the other elements—sonic, thermal, spatial and aesthetic—are to be considered together and incorporated in his solutions.

Through its support of IERI, continuing research should be conducted to keep abreast of new techniques, as they are developed. The IES should provide the "know-how" as well as convince its members of the validity of the document. Those members of IES who represent the manufacturing and sales segments of the Society should be urged to accept the Guide as a responsible document to be followed. They should make sure that lighting fixtures and systems produced and placed upon the market conform in every respect to the principles of good lighting.

Lastly, the IES should provide information, through its publications, on the application of the Guide. For instance, a standard procedure of evaluating existing lighting systems against the principles in the Guide is urgently needed. Step-by-step instructions on how to make such an analysis would be a practical tool for educators, architects and illuminating engineers. It would also provide valuable information for the design of new systems.

Those of us who employ our creative and practical skills in the construction and planning world are not involved in the business of building monuments to ourselves, nor in erecting monuments to the materials that come from the assembly lines of our factories. "Public welfare and the good of mankind" are our goal. We are obligated to think of a landscape, unblemished by architectural monstrosities, enhanced by soundly engineered structures that are aesthetically acceptable, combining the elements of function and lasting good taste in design.

In our time we are giving thought to what our posterity will do with the buildings we erect today, to the kind of design that will with propriety belong to the future as well as the present.

I.E.S. REPORT

FOSTER SAMPSON

The "American Standard Practice on School Lighting" publication was a document of principles; an engineer talks about specifics, yet we still work with limitations and still fulfill principles. This is the same concept that our research institute follows. The Illuminating Engineers Research Institute is a separate body, not controlled by the IES, but by seven trustees under a trust agreement for the society. It is an objective organization that tries to conduct objective research free from any influences to get the truth itself.

Because of our research we think in terms of human organism being in space. And if you are going to have organisms in space, how should you best design the envelope that goes around them for protection and for everyday use?

We have found in the laboratory that whether we consider this a rectangular cube or a circular sphere makes little difference from the viewpoint of the visual circumstances. Following this concept, we have conducted 18 years' research, trying to determine the best design for the envelope. We have come to some principles which have been very thoroughly established, and they are reflected in this document.

First we start with the tasks. The tasks in general can be divided up into two forms: the "heads up" task and the "heads down" task, concepts developed by an architect. The "heads down" tasks involve minute detail. Because the work is within an arm's length, and because of the body's anatomical structure, the person must look down at the task.

The "heads up" tasks occur when we are dealing with people face-to-face. These tasks are very important in the schoolroom, not so important in the office or the industrial plant where the "heads down" tasks are more critical. Aside from the chalkboard, most of the critical tasks in the classroom are "heads down" tasks.

We start with this focal point, and we have to determine how much light is necessary. Dr. Blackwell of The University of Michigan and now of Ohio State University, director of research in vision, has developed the analysis and the evaluation of tests which we use to measure the amount of light necessary for any task. It simply equates any unknown configuration of the field to tasks of the laboratory. The laboratory task is a circular disk used because it is a symmetrical test object and the eyes are symmetrical. We start with the basic test and move to all other types of configurations that are found in everyday life. Nobody works with a disk on white paper.

We deal with complicated pencil marks and printed material, and all the other things I am going to show you in a few minutes. We have already measured a whole series of tasks and recorded them. These tasks occur in the shop, and home economics, and the darkroom and other places.

Once we have the amount of light on the task itself, there are other simple rules found from the laboratory conclusions. If the surroundings around this focal point depart more than three times from the brightness of the task or lower than one-third the brightness of the task, there is a definite loss in the ability to see that task. So we have to keep a balance in brightness. If we go three times brighter we are liable to get some glare. On rare occasions we do go as high as three times and do not suffer too badly. In some situations, the wall may be brighter than the chalkboard, and yet the chalkboard is so large that we are able to allow not more than three times the brightness of the task itself.

We have to keep walls at 50% to 60% reflectiveness. We want a most effective reflector on the ceilings for 70% to 90% reflectiveness. We must have our desks 30% to 50% on reflectiveness, and the floors 30% to 50%. This is greater than we have ever had but it does produce better housekeeping, as we have found already.

What about comfort in these fixtures? This was a very great problem for a long time. We have very elaborate glare evaluation systems, but at the first meeting we had in 1954, someone said these systems take an engineer too much time to evaluate, so why don't some of these engineers get together and come up with a simpler answer. They did, and formulated the "scissors curve," so-called because two straight lines cross on the curve. There is a focal point with two short ends and two long blades.

Previously we tended to go to uniformity fixtures. Now we allow non-uniformity fixtures as long as we graduate the brightness at the various angles, at the horizontal—very low, but as you go higher and higher you can have higher and higher brightness.

A blast of lighting right overhead will give glossy reflections which decreases the ability to see; in fact, you probably have tilted a magazine on occasion in order to see it better. If you take any gloss thing in front of you and do this, I am sure you are going to see a blast right back at your face. You are apt to see a whole multiple of reflections because of lights overhead. We must diffuse this light, cut down the concentration, have the light come from wider angles. If it comes from greater angles, the amount of reflection is cut way down.

Gentlemen, this quality is most important. Unless we hold the line on limiting brightness of the room, we are going to have chaos. The selling of lighting equipment is a vicious game. It is undercutting—ten cents here and ten cents there, and every time they undercut they cut the quality and they cut a half-inch off the reflectors. The legitimate manufacturers who

want to do a good job are constantly being underbid by manufacturers who have no engineering department. This is a vicious situation. We hope all of us can work together to try to hold the line. We would like to have you request the "scissors curve" data from the laboratory. You find out whether the lighting meets the "scissors curve" or not, and when you do pass it, it is good lighting. We have found out time and again, it really works.

We also knew there were losses due to reflective glare, but we couldn't measure them. We knew that some lighting systems were worse than others, but we didn't know how to evaluate these particular differences. Two men from Toronto took upon themselves the monumental task of attempting to make readings with laboratory equipment that gave them these values. In some instances they measured up to 20% loss. A 30% loss sounds like quite a bit, but you could still see. We did not know what a 30% loss meant! In fact at one of our meetings in Chicago, John was telling us about this particular study and what he had found. He said that we have lighting systems that will have from 4% or 5% losses right down to 30%. Now how far do you want to go? What kind of limitation would you say would be reasonable in accepting reflective glare?

For a lack of any better information, we met on a midfrequency level, and decided 15% would not be so bad. We were willing to accept a 15% loss because we did not know at that time what that meant in terms of visual accuracy. Fortunately we coordinated with the work Blackwell was doing at the same time, and he said "I can tell you when you have a 1% loss, you must increase the illumination by about 15% just to compensate in the loss of contrast." In using the curve that Blackwell gave us, if we accepted a 15% loss, he recommended that 63 foot-candles would have to be raised to around 240 foot-candles. We started to shake our heads and think a minute because that 15% loss looked like a big figure. Even at this time we did not know any samples that determined what losses were going to be. A lighting engineer could get an answer if he worked hard all day and had a computer handy. As a practicing engineer, I am not ready to spend that kind of time trying to find out what this is going to do. I racked my brain and talked to everyone I knew, trying to find some better and more straightforward way of handling the problem.

A year ago in May, in Sacramento, I heard about the first story that Dr. Blackwell has written on polarized light and reflective glare. He explained in detail his method of evaluation and I realized that maybe we could use the same basic procedure, using field equipment instead of laboratory equipment. He tested eight or ten tasks, (glossy paper, printed material, typewritten material, thermo-fax, pencil material, and ballpoint pen). He had a whole list of materials. Since I was interested in schools and since the 63 foot-candles was for pencil tasks, I selected single simple tasks such as pencil lines on paper. I knew that our California classrooms were about 30 feet by 32 feet, so I tried this out and I found that I

could make a distinctive difference with the field equipment. I gave Dr. Blackwell the recording of what we had done. He evaluated the method and checked back with the figures in his tables. Then he said, "Sampson, I think you have a method by which we can go directly into the field and within a matter of minutes evaluate the system of illumination which you are putting into your various classrooms." Basically we used the spectrum spot meters, which measure the brightness of an area on a dial. This is not comparison equipment because anyone reading the meter can find the same answers. I made the tasks of pencil lines large enough to be encompassed by the field of the meter. Although this included the white paper in the background, it also included the pencil line and we were able to get the brightness of the task.

At this point in his presentation Mr. Sampson used a series of slides illustrating the use of his evaluation system in a series of classrooms having various types of illumination. He also distributed papers which further explained the procedure.

This particular presentation was not given as a final answer to contrast and reflective glare problems. I think that there are others who agree that this method of evaluating lighting systems has merit. The IES is now working on a procedure to standardize this particular method. I do feel that this field equipment can give you a pretty good indication of what lighting you should have. I hope that because this has been said in public somebody will pick up the challenge and complete this system and actually put it into an acceptable, nationally recognized form which you can use to evaluate your own lighting systems.

Following the panel's presentation, the chairman expressed appreciation to the Denver Public Schools and all who helped make arrangements for the demonstration classroom. Questions and comments were offered from the audience, after which the meeting was concluded by William F. Clapp.

FALLOUT SHELTERS

"FEDERAL PROGRAMS ON FALLOUT SHELTERS"

JOHN CAMERON

School Housing Section
U.S. Office of Education

"WHAT ROLE SHOULD SCHOOLS HAVE ON FALLOUT SHELTERS?"

W. D. MCCLURKIN

Director, Division of Surveys and Field Services
George Peabody College for Teachers

NCSC POSITION ON FALLOUT SHELTERS

MERLE STONEMAN

Chairman, Fallout Shelter Committee

REPORT OF THE COMMITTEE AS APPROVED

The Fallout Shelter Committee Report was distributed to the membership at the second general session Tuesday, October 9. Merle Stoneman, committee chairman, asked the members to read and think about it. President Taylor presided at the general discussion Thursday, October 11. He noted that the Fallout Shelter Committee had been appointed and asked to prepare a presentation because many questions had been received concerning the NCSC's position on fallout shelters.

FEDERAL PROGRAMS ON FALLOUT SHELTERS

JOHN CAMERON

First, I think that we can omit the work "blast" from the topic that we are considering. The deliberations of the Department of the Defense and Civil Defense Offices are now giving principal concern to shelters as a means of fallout protection, not as protection against blasts that might occur.

I am to discuss with you the Federal program of Fallout Shelters. It is the Administration's program, not simply that of the Department of Defense or the Office of Civil Defense. When it became apparent several months ago that we would undoubtedly be involved in the development of legislation relating to fallout shelter and possibly in the regulations that might be drawn up by the Administration, I attempted to analyze what the situation might be in an individual school. I will share them with you at this time, because I think that it has meaning as the Federal program has evolved.

The first thing I said to myself was that school children are at the school building approximately one-eighth of the year. This means that they are away from the school seven-eighths of the time. It would be necessary in seven times out of eight for the children to return to the school in case there is an atomic attack, and it is the community shelter to which they should be going. It is inconceivable that a parent take a child or children to the school and then return home where there may or may not be any protection, or go to some other community protection. I think it stands to reason that the family will want to be together whatever the circumstances might be. Therefore we are not thinking in terms of just a shelter that might house the children assigned to a specific school. We are thinking of the school as a location in a network or a single community shelter, whatever the community's program might be. This could only lead me to the conclusion that the fallout shelter program is not the concern of only school administrators, it is not the concern of only hospital administrators, nor any one segment of our population. Rather it is a community-wide problem and can only be satisfactorily solved on a community-wide basis.

I think that the shelter program the Administration has evolved follows that community shelter concept. We were involved in a good many meetings with officials, and we did develop for the Office of Education a paper on considerations that we felt should take legislation and regulation into account.

Basically, it provided for these things:

1) That the integrity of the educational building should be preserved for educational purposes.

2) That any approvals for fallout shelters in educational facilities should be limited to approval of the features of that portion of the building relating specifically to the fallout shelter, and in no way should include approval or disapproval of the facility as an educational facility. That would also apply to the inspections that may be necessary to the facility when completed.

3) That the normal channels for the development of the plan and specifications for its educational facilities at the local and state level should be preserved. We also said in the beginning of this paper that this is not a school construction program, it is not an educational facilities construction program. It is a civil defense project and therefore, at the Federal level should be administered by the Department of Defense, the Office of Civil Defense and not by the Office of Education. We did indicate however that, as the program might relate to on-going programs of the Office of Education, it should have the responsibility for the coordination between these programs. The only program that might be involved at the present time is 815 which gives Federal financial assistance to the school districts which have experienced a heavy student population impact due to Federal activity in the area. At the time we were working on this paper it seemed a good possibility that there would be Federal aid to assist in the construction facilities for higher education in medical colleges, and of course that might happen if the subject went before Congress.

They are the main points that we have attempted to make, in reference to the development of the legislation and the development of regulations which might come out of the passage of such a bill.

By Executive Order on August 1, 1961, the President transferred basic responsibility for civil defense from the former Office of Civil Defense and Mobilization to the Department of Defense. With its remaining function, OCDM was renamed Office of Emergency Planning.

The Director of the Office of Emergency Planning is responsible for planning continuity of State and local governments, the natural-disaster relief program, the defense mobilization program, and the strategic and critical materials stockpiling program. Previously established policy calls for making maximum use of existing Federal departments, with the civil defense responsibilities of each clearly defined.

The Secretary of Defense is in charge of the development and execution of a program to minimize the effects of attack, including informing and educating industry and the public in methods of survival. This includes a fallout shelter program, a warning and communications system, and a program to assist State and local governments in such post-attack com-

munity services as health and sanitation, maintenance of law and order, firefighting and control, debris clearance, traffic control, and provision of water supplies.

This paper will limit itself to the fallout shelter program. The shelter program has three major portions:

A. National Shelter Survey

1. Purpose—to identify shelter space for 50 or more people in buildings, tunnels, caves, and subways throughout the country.
2. Method—contracts let with more than 600 architectural and engineering firms to:
   a. analyze the structures
   b. gather up the data
   c. assist in locating names and addresses of owners of buildings
3. The responsibility for obtaining permission to use the identified space for public shelter purposes is up to local government and civil defense organizations.
4. The architects and engineers, equipped with the computations on potential shelter space and the permission of the owner, make a thorough examination of the premises, marking such space as appears to meet standards and developing cost estimates of minor improvements to increase capacity and bring substandard space up to the prescribed 100 protection factor.
5. The resulting plans and estimates are being made available to the building owner who may or may not undertake the modification work.
6. Status—
   a. 27,000 building owners have signed licenses giving permission for use of their buildings as public shelters.
   b. Shelter supplies for 37 million spaces are being procured from FY 1962 funds.
   c. Municipal governments, working closely with the Department of Defense, are preparing to take delivery of 10,000 boxcars of shelter supplies for 200,000 shelter areas.
   d. The survey reveals that there is enough space for 60 million people which needs only to be marked and provisioned.
   e. When completed, to quote President Kennedy, "The chances of survival of tens of millions of Americans will be improved at a cost of $3 to $4 for each person."
   f. Congress has appropriated sufficient funds for the continuation of this program.

B. Fallout shelters in Federal and military structures

1. Purpose—to provide fallout shelter space in structures owned or leased by the Federal government.

2. Status—The authority for the military part of this portion of the program was requested in the military construction authorization bill. It was stricken from that bill by the Committee since it was believed that this should be dealt with in the fallout shelter bill itself. This source of authorization is not available to support an appropriation since no fallout shelter bill has been enacted.

   Quote from letter of August 8, 1962, from Congressman Vinson, Chairman of the House Committee on Armed Services, to President Kennedy: "I would like to point out however, that I believe that Federal structures should be designed so as to provide fallout shelter and I would like to assure you that I will initiate action early in the next Congress to provide this authority."

C. Shelter Incentives Program

1. Purpose—to provide financial assistance to public and private nonprofit institutions engaged in health, educational, or welfare activities electing to include fallout shelter space needed in their buildings.

2. Amount of financial assistance—appropriation requested: 460 million dollars. It is anticipated that the rate of shelter incentive payments for approved shelter space will be set at $25 for each approved shelter space, or the actual cost of shelter construction or modification, whichever is less. This is based upon $2.50 per square foot for 10 square feet allowed for each person sheltered.

3. Effective date—To avoid discouraging shelter construction pending action on the legislation, the Congress has been requested to authorize payments for eligible projects in which shelter construction started after January 1, 1962.

4. Minimum standards of approved public shelter space. For eligible institutions to receive payment, the shelter space must:

   a. Meet shelter standards prescribed by the Office of Civil Defense;

   b. Be located in an area where existing shelter space is inadequate in the opinion of local civil defense officials;

   c. Provide shelter space for 50 or more persons in one structure;

   d. Be immediately available for public use as shelter in an emergency in accordance with the plan or direction of the local civil defense organization or local government; and

e. Not involve peacetime use which would prohibit, restrict, or interfere with the immediate use of the area in an emergency as public shelter (e.g., use of the shelter space for heavy or extensive storage would be prohibited).

5. Status—Hearings have been deferred until the next session of Congress. The President has requested that hearings be held early enough to enable a supplementary request for enough FY 1963 funds to keep pace with those communities and eligible institutions with plans for creating new fallout shelter spaces.

SUPPORTING PROGRAMS

A. Training courses for architects and engineers.

In connection with the National shelter survey it was necessary to establish facilities to train large numbers of architects and engineers through two-week courses in the complex geometry and physics of interaction between radiation and building materials and building shapes. During the 1961-62 academic year, under a program of instruction conducted in nine universities and two military schools, about 2,700 architects and engineers were certified by the Department of Defense as being proficient in fallout shelter design and analysis.

These courses will be continued during the 1962-63 year with seven courses at Fort Belvoir, Va., four at Fort Huneme, Calif., two at the University of Michigan, and one at George Washington University in the District of Columbia. All plans and specifications for fallout shelters supported by Federal funds will be required to be prepared or reviewed by an architect or engineer certified as being proficient in fallout shelter analysis.

A national directory and regional directories have been issued which list all the architects and engineers who have satisfactorily completed a two-week course. At least five State Departments of Education now have certified persons on their staff.
The Office of Civil Defense is planning a series of two-day courses designed to acquaint school administrators and principals in architectural and engineering firms with the problems of fallout shelter construction. These will probably begin soon after the first of January, 1963.

A matter of interest may be the design competition on schools incorporating fallout shelters. The jury, of which I am a member, will meet in Washington the first week in November to judge the entries.

B. Shelter Technical Assistance

Since September, 1961, nearly 3,000 plans for buildings have been evaluated for shelter capacity, comments, and suggestions. A series of professional guide manuals have been prepared or are in preparation. Some will cover blast and fire resistance designs; others will focus on schools, hospitals, garages, apartments, and other specialized problems of antiradiation constructions. I have been asked to review and comment on one dealing with shelters in schools. It should be available soon after the first of the year.

C. Shelter Research Program

Last year the Office of Civil Defense had 16 million dollars for research and this year has 10 million. Their research is divided into four major catagories:

1. Shelter Research Program—The Shelter Research Program will encompass all aspects of shelter design, construction and use, including such basic considerations as radiological shielding and blast resistance, shelter materials and components, and studies regarding the shelter environment, habitation and management.

2. Support Systems Research Program—The Support Systems Research Program will include studies, evaluation and basic investigations of all systems, subsystems, components and organization pertaining to the preattack, transattack and immediate postattack periods, except shelter research.

3. Postattack Research Program—The Postattack Research Program includes all systems, subsystems, components and organization to the postattack phase of civil defense.

4. Systems Evaluation Program—The Systems Evaluation Program is intended to evaluate and integrate the other programs of research effort.

In summary, the Federal fallout shelter program consists of three major parts:

a. The shelter survey which includes the identification, marking, and stocking of suitable space.
b. The shelter program in Federal and military structures.
c. The shelter incentives program in schools, hospitals, and welfare buildings.

Supporting programs include:

a. Training courses for architects and engineers
b. Technical assistance
c. Research

WHAT ROLE SHOULD SCHOOLS HAVE ON FALLOUT SHELTERS?

W. D. MC CLURKIN

I do not know any issue that is of less interest right now than the question of fallout shelters, but I remember it being of live interest a year ago, when we met at Atlanta. And if you would give me the authority which exists in several different parts of the world, I could revivify the concern in 24 hours. All it would take would be one of our armored vehicles crossing the border in Berlin, or to call out the reserves again, which the President now has the power to do at his discretion. Tomorrow morning people would be interested again in fallout shelters. Or we could have a test firing of an ICBM missile from one of the new launching pads on the northern coast of Cuba, and we could aim it up the Atlantic.

Now those are possibly far fetched but I think that all would acknowledge that they are possibilities. And so we have this phenemenon in American life. We will get on a bandwagon for education and ride it for four or five years and then get on another. The fallout shelter question is now in the ebb, following the crest that it hit last year.

There is not any one answer to the question "What role should schools have in fallout shelters?" John Cameron has some definite specifics in terms of the Federal program, but much of that was based on assumptions. For example, he started with the assumption that youngsters will be away from school seven-eighths of the time. His assumption is that a nuclear attack is likely to occur at any particular part of the 24 hours. Tactically and strategically wouldn't an attack create more damage and panic if it caught people concentrated in the urban centers during the daytime than if they were dispersed among their homes? Consequently, I would hazard an assumption quite the opposite of his, that the chances are greater that an attack would happen in daytime.

It is on the basis of assumptions that we proceed with a line of intelligent thinking and planning in an action program. Now, I think the most basic assumption that we have to make is that of the role of the schools in any time of emergency.

Not all of the states have compulsory school attendance law but not too long ago they did have, under which they wielded a big club and forced the parents to send their children to school. I think that most of the states recognize the obligation to look after the physical well-being of children. During the course of our careers we have seen the fire hazards in the school reduced significantly. And yet I have not heard a single state

propose the repeal of its regulation requiring school fire drills. We have definite areas in this country where earthquake faults exist. I have here a map showing the incidence; the points or locations of earthquakes in this country. One of our states has adopted an earthquake code in which it proposed to build safety for school children into the building itself.

Well, there is an assumption that will not hold water—that the child will be in school when the earthquake strikes. Because the state has been so careful in building its earthquake code into school building regulations, it does not have any plan for an earthquake catastrophe. The human disposition to immediately run outdoors is the most dangerous thing the occupant of a building can do, yet this state does not provide any instruction or drills in its schools to help youngsters take care of themselves away from school.

If we are sincere about the need for fire drills, because a fire hazard exists, we ought to be equally as sincere about the other hazards that threaten children when they are under school jurisdiction.

Whether natural phenomena or man-made disaster, how critical is the need for shelter? I would ask that in relation to fallout shelter. How critical is the need? How probable is an attack?

The military, in approaching this question, has so many assumptions that we get lost in them. They have to assume what the critical target areas are, and those are wild assumptions. Which would you assume to be more critical: the Pentagon in Washington, which can be reached by a submarine, or Continental Defense Headquarters right here in Colorado, which cannot be reached from a submarine? How many warheads is the enemy going to use on each target? The military can assign it as one, or two, or possibly three. Is it going to be a single shot affair or are they going to get us alerted with one, and then follow it immediately with another, after we have exhausted out interceptor capacity? Makes a lot of difference on whether we set up 50 target areas or 100 or 150.

Once we make this assumption, we take meteorological data, as OCDM has done, and plot the course of fallout—twenty-four hours later, one week later, all based on the assumption as to where the first are going to be, and what time of year it is, and what is the size of the instruments. Suppose there is a five degree error of malfunction in the aiming of this thing, which would throw it all out of kilter. I am saying, that after we add up all the unknowns and make our assumptions about them, it still leaves us in a state of confusion and we need not carry it to the silly extreme of whether it is a Democratic or a Republican administration, because the party policies with regard to fallout shelters are diametrically opposed to each other.

I think that every school system, which is basically a local community operation rather than state or national, is obligated to have a plan for

the protection of children under any foreseeable emergency conditions. It would extend from as simple a thing as a college or university telling residents what to do if the heating plant broke down and the temperature was zero, through the gamut of natural emergencies and phenomena. I do not think that we can stop short of the fallout question.

Now the decision may be that we are not going to provide the shelters, but I think that the obligation is to have the decision made ahead of time, no matter what the hazard is. It is too late to decide after the hazard exists. Certainly the effects can be known, and anticipated.

My thinking is reflected in this kind of fuller view. One obligation of the school is to educate children to cope with problems, including hazards. The ability to take quick action in an emergency of any kind is a commonly expected goal of learning. The school has the responsibility of incorporating in its instructional program the knowledge and the skill that children need to cope with floods, tornadoes, blizzards, hurricanes, earthquakes, fallout, and what not, as a practical organ of experience.

And so I would say that every school system should have a disaster plan. I would not be willing to say that every school system has a responsibility for a fallout shelter. The disaster plan will vary with the location, size, facilities, and personnel of individual schools. You cannot generalize for a school system where you can have a variety of different types of school buildings and neighborhoods. The problems in the urban schools would be different from rural schools, but every school system should coordinate its plan with the Civil Defense Authority for any emergency it can anticipate while children are under school jurisdiction.

DISCUSSION OF THE NATIONAL COUNCIL'S POSITION

MERLE A. STONEMAN, MODERATOR

I think you understand that we feel a tremendous responsibility placed on us as a committee, and we are quite modest in our presentation to you. This committee consisted of six individuals: E. J. Braun, Thomas S. Winn, W. D. McClurkin, Floyd Parker, Cleve Westby, and myself. We were appointed shortly after the Atlanta meeting. We convened in Atlantic City during the AASA conference, and developed a series of points upon which we felt our report should be based. A rough draft was drawn up. This was presented in Atlantic City, and again with the group meeting at the time of the Eight States School Building Conference in Lincoln. Among the individuals present at that time were President Taylor, John Cameron, Floyd Parker, and Merle Stoneman. Following the discussion a revision was made, which was then circulated among the membership. After further revision, the report was compiled and brought to this meeting for consideration of the membership. It is my understanding that there are several courses of action which might be taken here. You may approve the proposal as it stands, in which case it will be included in the report from the total conference. You may suggest amendments to the report, and have them discussed and voted upon, and then approve or reject the report with or without such amendments. You may reject the report without any further action; remand it to the committee with suggestions that certain changes or considerations be made; or reject it and give the problem to another committee. I am going to recommend the approval of the report as presented to you and let the Chairman take it from there. I therefore move the approval of the report of the Fallout Shelter Committee, the special commitee appointed by the President, as it appears before you at this time. I so move, Mr. Chairman.

The motion was seconded by Cleve Westby. Following the motion by Stoneman, there was discussion from the floor. The Report was amended by motion of Gibson, and then approved as amended by a vote of those present.

POLICY GUIDES ON SCHOOL FALLOUT SHELTERS

Report of the Fallout Shelter Committee
of the National Council on Schoolhouse Construction
as Approved at Denver, Colorado
October, 1962

1. The National Council on Schoolhouse Construction reaffirms its dedication to the American educational system as essential in the preservation of our way of life. While it joins with others in wishing for world peace and amity and in deploring international tensions and hostility, it recognizes that Communism has declared itself to be an enemy of the United States and American Democracy.

2. The Council believes that America is worth preserving at all costs. To the extent that protection from radiation hazards due to fallout, whether from excessive atmospheric pollution through testing or aggressive attack, is essential to the survival of segments of the American people, school facilities and personnel should be considered as potential resources for the public welfare. School officials should make them available while simultaneously safeguarding the educational interests and physical well-being of school children.

3. For many generations American public schools have operated as service centers for their neighborhoods. The schools have intentionally cultivated the concept that they are inherent elements in the cultural, social, and economic life of their communities and in the daily lives of their patrons. In times of peace, school playgrounds have been developed for the use and benefit of entire neighborhoods; buildings have been used for scout meetings, adult education and public forums, and for farm machinery and auto repairs; and additional facilities, including vegetable canning and meat processing, have been provided for community-wide service.

4. In times of emergency or need, school facilities and personnel have been made available for the public welfare, including the housing of flood refugees and storm victims, accommodation of divine worship, wartime rationing and registrations, scrap metal drives, public assembly, and many other purposes. The gravity of the circumstances has determined the degree to which normal school routine should be disrupted, even to the temporary suspension of school activities, but the basic purposes of the schools have not been jeopardized.

5. The National Council on Schoolhouse Construction considers that the interminable continuation of international tensions in the Cold War, the development of Intercontinental Ballistics Missiles and nuclear weapons systems, and the race for space have not altered the traditional concept of

the public school as a neighborhood and community service agency. It considers it appropriate and proper that school personnel and facilities should be considered as potential resources in the development of emergency plans for a community, including fallout shelter and survival of the general public. At the same time, the Council makes a sharp distinction between the question *"Can* the school be suitable civil defense shelter?" and the question *"Should* the school be so modified?" The first question involves technical judgments for the architectural, engineering, and scientific professions, not education. The second question inescapably involves judgments of civil and educational authorities and the lay public, and fewer judgments by the technical groups, except as interested citizens.

6. The recent reversal of policies of the federal government toward civil defense, the recent changes in civil defense doctrine from evacuation to shelter, and the current interests of the Department of Defense in the nationwide survey of potential shelters all focus attention on boards of education, school officials, and the physical facilities under their control. When and if school authorities are asked to coordinate their school plant programs with the emergency planning of their community, perplexing and possibly conflicting questions may arise. The National Council on Schoolhouse Construction proposes the following statements as guides to decision-making under these conditions:

a. School authorities recognize their legal responsibility for the physical safety of children while under school jurisdiction. The discharge of this responsibility requires adequate plans for protection against either natural or manmade hazards during school hours.

b. Developments in nuclear science and military capabilities have created radioactive fallout as a potential hazard which undeniably could exist during school hours. Adequate plans for coping with such a hazard, should it occur, must be made in advance and adopted as school policy as definitely as fire, tornado, blizzard, earthquake, and other safety policies are adopted.

c. The unique nature of the potential hazard and the educational authority's lack of experience with radioactive materials requires competent, technical advice in the development of school policies and plans. The local civil defense office is usually the nearest source of correct information and is th official agency for the coordination of community planning for these conditions.

d. The duration of the emergency period requiring protection from radioactive fallout extends so far beyond the school day that such varied problems as food, discipline, sleep, and utility services become paramount. Thus, with the school population alone, the provision of shelter probably becomes a function of civil rather than educational government. With adult population added, school emergency operations should be transferred to civil control as soon as possible.

e. School design and construction since World War II have been widely characterized by concrete slap-on grade without basement, large expanses of glass fenestration, dependence upon natural ventilation and principally upon natural light, and many other features which are educationally, and economically, defensible but are not conducive to fallout protection. Current suggestions being made for new school construction include radical changes to provide for neighborhood shelters, such as windowless schools, schools wholly underground, multipurpose areas under playgrounds, and the like. The Council considers that the reports which justify the architectural and engineering feasibility of the proposed designs simultaneously violate desirable educational and psychological criteria which have been established by experience in the construction of more than $20 billion of school facilities during the past twenty years. The Council's position is that shelter provisions are not compatible with educational requirements, and that special shelter requirements which interfere or conflict with defensible educational criteria require the separation of school and shlter facilities.

f. School plants intended to serve as fallout shelters require extra expenditures not educational in nature. It is not conceivable that schools as shelters will serve school personnel only. Consequently, extra expenditures beyond the normal local school construction cost level are noneducational and are not legitimate charges against school tax or capital outlay funds. The Council maintains that all extra and incidental costs attributable to shelter design or in excess of educational requirements should be provided by outside or general revenue sources. School boards should refuse to dedicate bond funds or school tax machinery to the financing of shelter facilities, because school financing authority is designed solely for the *education* of children and youth.

g. The unique requirements of adequate fallout shelter design compel a specific school-by-school analysis of existing facilities. Once a school board decides to incorporate shelter capabilities in a given school, it is confronted with the ethical obligation to provide equivalent protection at all other centers supported by the same tax system. For this reason, the Council recommends that local boards of education offer school facilities to local civil defense authorities for evaluation and consideration as potential neighborhood shelters and, simultaneously, report to civil defense officials the number of pupils in each school center whose protection from radiation hazard is the primary responsibility of civil government.

h. The Council reaffirms its policy stand that federal relations with local public schools shall be channelled through the state education agency. Accordingly, any proposed federal participation in the provision of fallout shelters in schools should be within the established pattern of federal-state relationships and state coordination of local public education. State approval of local plans should be an integral part of school shelter con-

struction in the same manner as state concern for fire safety, sanitary and health standards, and the like. Competent review by the state of architectural planning and design features should be a requirement for any shelter program involving local schools, for the technical requirements of radiological protection are beyond the scope of either professional education or architecture.

EXECUTIVE SESSION

NEW MEMBERS

ANNUAL REPORT OF THE SECRETARY-TREASURER

ANNUAL FINANCIAL REPORT

REPORT OF THE AUDITING COMMITTEE

NEW MEMBERS

Floyd Parker, Secretary-Treasurer, read the names of the applicants endorsed for membership by the Executive Committee. A unanimous vote was cast, accepting all candidates for membership.

New members included:

Boice, John R., Associate Director, School Planning Laboratory, School of Education, Stanford University, Stanford, California

DeRemer, Richard W., Associate Professor, 2820 Cathedral of Learning, University of Pittsburgh, Pittsburgh 13, Pennsylvania

Evans, Ben H., Associate Professor and Coordinator of Architectural Research, Architectural Research, A & M College, College Station, Texas

Frostic, Ralph F., Educational Consultant, Department of Public Instruction, Room 19 Capitol Building, Lansing, Michigan

Gilbert, Ernest R., School Architect, Richmond School Board, 2907 North Boulevard, Richmond 30, Virginia

Goby, Lee W., Assistant Superintendent of Schools, Department of Buildings & Grounds of Springfield Public Schools, District 186, 1900 West Monroe, Springfield, Illinois

Gores, Harold B., President, Educational Facilities Laboratories, Inc., 477 Madison Avenue, New York 22, New York

Grimm, Russell Irvin, Consultant School Plant Planning, School Building Services, State of New Jersey Department of Education, P.O. Box 2019, Trenton 25, New Jersey

Hake, Barthold R., Director Division of Buildings & Grounds, Louisville Public Schools, 506 West Hill Street, Louisville 8, Kentucky

Howard, Edwin E., Director of School Building Planning, Chattanooga Public Schools, 1161 West 40th Street, Chattanooga 9, Tennessee

Hutcheson, David W., Director School Plant Services, Department of Education, Capitol Building, Lincoln 9, Nebraska

Lane, Willard R., Professor of Education, University of Iowa, West 301 East Hall, Iowa City, Iowa

Lansing, John, Building Program Coordinator, Detroit Public School Center, 5057 Woodward, Detroit, Michigan

McLaughlin, Daniel R., Assistant Dean, University of Nevada Southern Regional Division, Nevada Southern, Las Vegas, Nevada

Martin, Robert E., Director of Schoolhouse Planning, State of Indiana, 401 North State House, Indianapolis 4, Indiana

Meverden, Merville L., Director of Physical Plant, Central Missouri State College, Warrensburg, Missouri

Myers, George A., Supervisor Maryland State Department of Education, 301 West Preston Street, Baltimore 1, Maryland

Nesper, Paul W., Associate Professor of Education, Ball State Teachers College, Muncie, Indiana

Resnick, Jerome J., Supervisor Building & Construction, Anaheim Union High School District, 123 North Citron, Anaheim, California

Riecks, John M., Assistant Superintendent of Buildings & Grounds, Franklin Administration Building, 13th & K Streets, Public Schools, Washington 5, D.C.

Schadt, Marvin R., Head Department of School Administration, Kansas State Teachers College, Emporia, Kansas

Smith, Wallace R., Assistant Oklahoma City Public School System, 900 North Klein, Oklahoma City, Oklahoma

Swafford, George E., Assistant Professor of Education, Department of Education, Psychology & Special Education, Ball State Teachers College, Muncie, Indiana

Thomas, Paul W., Director of Research and School Plant Planning, Kanawha County Schools, 200 Elizabeth Street, Charleston, West Virginia

Welch, Lester J., Director of School Facilities, Board of Education of Montgomery County, Rockville, Maryland

Womack, Darwin W., Director School Plant Services, Atlanta Public Schools, 224 Central Avenue, S. W., Atlanta 3, Georgia

President Taylor announced the appointment of two committees: NOMINATIONS: A. C. Tjomsland, Chairman; L. L. Waite; Harold Silverthorn; E. J. Braun; W. W. Theisen. RESOLUTIONS: J. A. Anderson, Chairman; G. C. Bailey; W. R. Flesher.

ANNUAL REPORT OF THE SECRETARY-TREASURER

FLOYD PARKER

There are a number of items which deserve your attention. Some are the result of activities during the past year, others as a result of the executive committee meetings which have been held for the past two days.

1. We have had requests from the following members to terminate their membership:

Gregg, Russell T., Professor of Education, University of Wisconsin, Madison, Wisconsin

Hosteland, Raymond, York Community High Schools, 355 West St. Charles Rd., Elmhurst, Illinois

Leidle, Vern V., Consultant, School Plant Facilities, State Board of Education, Olympia, Washington

Lockhart, Paul, Assistant Superintendent, Riverside Public Schools, Riverside, California

McConnell, William R., Board of Education Finances, P.O. Box 1616, Santa Fe, New Mexico

McQuagge, Carl L., Professor of School Administration, Mississippi Southern, Box 85, Hattiesburg, Mississippi

2. During the past year, two deaths have occurred, H. R. Fuller of Toronto, and many of you know J. B. Calhoun passed away some weeks ago.

3. Nonpayment of membership fees has not been a serious problem, and at the present time we have seven members with fees delinquent for the three-year period. They will be dropped after this meeting subsequent to receiving another letter.

4. Most of you have received the *Newsletter*, and although it has been a minimum effort, it was an attempt to keep you informed. Every effort has been made to keep it newsy and on a personal basis, but this depends on your help in supplying materials.

We are exploring the possibility of offset printing, with a four-page folder, three hole punched. We intend to make it as polished and professional as possible. Please help by continuing to send me the news in your area.

5. We are concerned that the new candidates are not as well informed about the annual meeting as they might be. To help remedy this, we would like to make it a policy that the sponsoring member assume responsibility for the candidate until he becomes a member.

6. You will notice very few changes have been made in the proceedings from last year. Several items were included for the first time: executive committee minutes, travel and subsistence regulations, and the date you became a member after each name on the membership list.

We may make some changes in the cover and format, but these will be with the approval of the executive committee. Our intention is to make this publication as valuable to you as possible.

Last year we mailed copies of the proceedings to the secretaries of the national education organizations and will extend that mailing for the coming year.

7. In the office I have a half-time secretary authorized by the executive committee and a graduate assistant provided by Michigan State University, who devotes half time to National Council work. This person will assume major responsibility for the *Newsletter* and the *Proceedings*, and is available for assistance to the standing committees. Several research projects are under consideration.

At a later session, Floyd Parker announced that a permanent membership card had been developed for Honorary and Life Members. W. W. Theisen accepted the first such card on behalf of all life members, and Secretary Parker announced others would be mailed shortly. Honorary and Life Members are listed in Appendix C of this publication.

NCSC ANNUAL FINANCIAL REPORT

September 1, 1961 to August 31, 1962

RECEIPTS

Actual Balance September 1, 1961	$2,767.40	
Membership Dues	2,955.65	
Sale of Publications	2,365.18	
Miscellaneous	7.50	
Total Receipts		$8,095.73

DISBURSEMENTS

Convention Expense	$ 95.76		
Printing & Editing Proceedings	804.98		
Reprinting 13 Principles of Economy	344.40		
Travel (Committee)	764.30		
Office Secretary	1,724.37		
Office Supplies, Postage, Etc.	396.39		
Refunds on Publications	117.00		
Miscellaneous	29.22		
Total Disbursements		4,276.42	
			$3,819.31
First National Bank of East Lansing	$2,920.40		
Checks Outstanding	.50		
		$2,919.90	
University Account #31-3881		899.41	
Total Balance			$3,819.31

ACCOUNTS RECEIVABLE

Guide for School Plant Planning	19 @ $3.00	$ 57.00	
Thirteen Principles of Economy	20 @ $1.00	20.00	
Elementary School Plant Planning	40 @ $1.00	40.00	
Secondary School Plant Planning	44 @ $1.00	44.00	
Planning Facilities for Higher Education	2 @ $1.50	3.00	
Proceedings	13 @ $1.00	13.00	
			$ 177.00
Postage Receivable			4.71
Total Accounts Receivable			$ 181.71

PUBLICATIONS SUMMARY

	Inventory August 31, 1961	Copies Sold	Free Copies	Inventory August 31, 1962
Guide for School Plant Planning	485	451	32	2
Thirteen Principles of Economy	0	130	57	813
Elementary School Plant Planning	1,114	215	35	864
Secondary School Plant Planning	514	185	32	297
Planning Facilities for Higher Education	2,433	76	32	2,325
Proceedings	0	82	0	110

FINANCIAL CONDITION, August 31, 1962

Actual Bank Balance		$2,919.90	
University Account #31-3881		899.41	
			$ 3,819.31
Accounts Receivable			181.71
Savings Account			5,670.40
Publications Inventory			
Guide for School Plant Planning	2 @ $3.00		6.00
Thirteen Principles of Economy	813 @ $1.00		813.00
Elementary School Plant Planning	864 @ $1.00		864.00
Secondary School Plant Planning	297 @ $1.00		297.00
Planning Facilities for Higher Education	2,325 @ $1.50		3,487.50
Proceedings	110 @ $1.00		110.00
Total Resources			$15,248.92

NCSC AUDIT CERTIFICATION

The auditing committee, appointed by James L. Taylor, President of the National Council on Schoolhouse Construction met at East Lansing, Michigan on September 24, 1962. On this date the books and official records of the secretary-treasurer were audited as follows:

1) The general checking account balance at the First National Bank of East Lansing on August 31, 1962 was $2,920.40 as verified by bank statement and personal letter from the bank. The deposit book records a total deposits of $8,092.24 subtracting cancelled checks totalling $5,171.84 and outstanding checks of $.50 leaves a balance of $2,919.90 in this account. This corresponds with the balance of receipts and disbursements shown on the official books of the secretary-treasurer.

2) The university account balance at Michigan State University on August 31, 1962 was $899.41 as verified by the ledger sheet from the University Business Office. The ledger records a total deposits of $3,000.00 subtracting the total disbursements of $2,100.59 leaves a balance of $899.41 in this account. This corresponds with the balance of the deposits and disbursements shown in the official books of the secretary-treasurer.

3) Savings Account Certificate #7791 with the First National Bank of East Lansing indicates a balance of $5,489.82 as of September 1, 1961. Interest accumulated for the period, September 1, 1961 to September 1, 1962 is $180.58 thus making a total of $5,670.40 in the savings account on deposit at the First National Bank of East Lansing. This was verified by personal letter from the bank.

4) We have found all disbursements to be made by check and all accounts to be in proper order.
We commend the secretary-treasurer's office for its efficient and prudent management of the funds and records.

We recommend accepting the financial report of the secretary-treasurer.

Signed:

Wilfred Clapp, Chairman	**9-24-62**
Roland Strolle	**Date**
Ralph McLeary	

STANDING COMMITTEES

RESEARCH AND PUBLICATIONS

STATE SERVICES

PROFESSIONAL TRAINING

RESOLUTIONS

RESEARCH AND PUBLICATIONS

This report is divided into three sections:

1) A summary of the 1962-1963 activities of the Research and Publications Committee.

2) A statement of the status of the *Guide* Writing Committee's project.

3) The nature of this morning's Research and Publications program.

With regard to the 1962-1963 activities of the Committee, I am able to report the following principal efforts:

1) Considerable time was spent with the *Guide* Writing Committee in developing guidelines for formulation of the proposed new publication, and considerable effort was expended in a study of how the new *Guide* might best be edited and marketed: A report of the committee's findings was submitted to the Executive Committee at Atlantic City in February, 1962.

2) All members of the committee cooperatively and diligently assisted the Chairman in the preparation of this morning's session.

3) A third major effort of the committee involved the Chairman in two meetings concerning a growing awareness of school plant planners' need for accumulation and dissemination of school plant research information. I am happy to be able to report to you that about twenty key representatives of associations and organizations have informally banded into an organization which has as one of its primary targets the establishment of a national center which would maintain an inventory of all school plant research. (It is the Chairman's personal view that this is the most important single event that should occur in the field of school plant planning.)

4) Also, during 1962-1963 your Research and Publications Chairman engaged in a wide assortment of small tasks such as answering mail inquiries, and encouraging Council members to write critiques on specialized plant problems, encouraging the *Guide* Writing Committee, et cetera.

With regard to the status of the new *Guide,* I am happy to be able to report that the progress attained by the *Guide* Writing Committee is indeed satisfying. The *Guide* Writing Committee which includes Cochrane, Taylor, Conrad, Gibson, Silverthorn, and Chairman Knezevich, has made substantial progress on completing the draft which it was to prepare for the Research and Publications Committee. By the close of the Denver meeting the Research and Publications Committee will have reviewed the contents of the material drafted to date. Following this review the pub-

lishing schedule will be reviewed to see if a Spring, 1963, date still seems reasonable; it appears quite likely that publication before 1964 will be possible. Steve Knezevich has performed a remarkable job of securing drafts for various chapters; it should be noted that Steve and his committee have been diligently working on this writing assignment since October, 1961. They deserve the sincere appreciation of every member of the Council for the time and effort they have devoted to the release of a new edition of

Guide for Planning School Plants.

It should also be noted that Art Wohlers, former Chairman of the Committee, has been most valuable in the study of how the next *Guide* should be edited, published, and distributed. Although it is not appropriate to take the time of the entire Council to discuss how the new *Guide* will be processed, it is being called to your attention that considerable thought is being given to improving the content, format, and distribution.

With regard to this morning's program it is only briefly summarized in the printed program. Basically, the program consists of two parts:

1) A report which is now being presented.

2) A series of research information and discussion groups organized by Francis Darby to discuss the following topics:
   a) Writing Educational Specifications
   b) Determining Space Requirements
   c) Staffing for District Planning
   d) When to Use Consultants
   e) Orienting Staff to New Facilities
   f) Lighting
   g) Thermal Environment
   h) School Building Sonics
   i) Remodel or Replace
   j) Other Problems

In closing this report, I would like to briefly mention that as Chairman of the Research and Publications Committee, I will be attending the National Academy of Sciences, Building Research Institute's school planning conference in Washington, D.C. during November. In February I will be moderating a closed circuit TV program concerning "Portable Classrooms" at the annual AASA meeting in Atlantic City. Superintendent Willis of Chicago and an architect from California will be the two speakers.

RICHARD F. TONIGAN, Chairman
FRED FOWLER
FRANCIS DARBY
A. MILLS WILBER
CARROLL W. MCGUFFEY

STATE SERVICES

Your 1962 State Services Committee has continued the progress report suggested by the 1961 Committee on the accreditation or certification of state plant specialists. A questionnaire (dated June 7, 1962) was sent to all of the state school plant specialists in the fifty states, to the District of Columbia, and to the Territory of Puerto Rico. Fifty-two (100% cooperation) returns were received and are included in this report. Part A dealt with a progress report of the study now underway in each state on the accreditation or the certification of state school plant specialists. Part B dealt with the special state services offered in school plant planning in each state. All of the questions were not answered in all returns, hence, all totals do not equal 52. The results of this questionnaire are as follows:

PART A

1. For certification, should the school plant specialist be trained as an
   (Some indicated two or more areas.)

(a)	architect	8
(b)	engineer	3
(c)	educator	45
(d)	economist	1

2. If not one of the above general areas listed in 1, what is the area selected in your state?

One state has a specialist in each area listed in 1. Another state has an educator and an architect. A third state has an educator in charge with a specialist in each of the other areas.

	YES	NO
3. Should U. S. Office of Education rules or regulations cover such certification?	2	46
4. Will your present state laws, rules, or regulations permit such certification of a plant specialist?	21	23
5. Would permissive certifications by the U. S. Office of Education be acceptable to your state?	14	28

6. Members of the National Council have backgrounds and training which may be totally unrelated, yet they are doing good work in their specific jobs. How broad should this certification be for your state? (Should it be one area, two areas, three, four, or more areas as listed in 1 above?)

(a)	architect	23
(b)	engineer	17
(c)	educator	42
(d)	economist	7

NOTE: Some answered two to four areas should be included.

	YES	NO
7. Do you feel that there really is a need for certification or accreditation of the school plant specialist in your state?	14	38

PART B	YES	NO	
1. Are you planning to publish a new guide, manual, code, standards or regulations for school buildings?	29	18	
	KIND:	Standards	8
		Guide	11
		Manual	2
	Not indicated		8
2. If so, what will be the publication date?	1962	10	
	1963	11	
	Indefinite	8	

3. Other publications listed:

STATE	PUBLICATIONS	DATE PUBLISHED
Alabama	Better School Buildings—Bulletin No. 3	1953
California	Adopted—National Council for Schoolhouse Construction Guide for Planning School Plant	1958
Connecticut	ECONOMY SERIES	
	No. 1—School Building Project Procedures	1960
	No. 2—Long Range Planning and Educational Specifications	1962
	No. 3—School Sites—Selection and Acquisition	1960
	No. 4—Designing the School Plant for Economy	1961
Florida	Florida Board of Education Regulations on School Buildings	1959
	Physical Education Buildings	
	School Lunch Planning Criteria	
	Manual of Practices	
Georgia	A Guide for Planning and Construction of School Facilities in Georgia	1961
	Building Care—A Manual for Custodial and Maintenance Personnel	1961
Hawaii	Educational Specifications for The Public School Buildings in Hawaii, Volume I, Elementary School Buildings	1959
	Educational Specifications for The Public School Buildings in Hawaii, Volume II, Secondary School Buildings	1959
Idaho	Manual of Regulations and Recommendations For School Building Planning and Construction	1958

Indiana	Procedure, Planning and Approval in Constructing New School Plants	Being Revised
Iowa	Mr. Custodian—A Handbook for School Administrators and Custodians (Revised)	1960
	School Business	1958
	Before You Build	1953
	Educational Bulletin (Published monthly except June, July, August)	
Kansas	A Manual For Evaluating School Facilities	1962
	Standards For Accrediting Kansas Elementary Schools	1962
	Artificial Lighting For Modern Schools	1960
	Adopted-Guide for Planning School Plants, National Council on Schoolhouse Construction	1958
Kentucky	Music Facilities—Planning	1960
	Planning School Plant Construction	1958
	School Plant Operations for Kentucky Schools	1957
Louisiana	Maintenance of School Facilities	1962
	The Planning and Construction of Louisiana School Buildings	1954
Maine	Guide and Standards for Planning School Buildings in Maine (Revised)	1958
Maryland	Planning Maryland School Plants	1949
Massachusetts	Check List of Steps in Planning	1961
	Building Needs Conference	1959
	To Add or Not to Add	1956
	Score Card for School Sites	1949
	Do's and Don'ts—For Those Responsible for Planning and Constructing Educational Buildings	1949
	Selecting an Architect	1949
Michigan	Planning Better High School Buildings, Bulletin No. 418 (Revised)	1959
	School Shop Planning, Bulletin No. 2135 (Revised)	1959
	Equipping and Furnishing the Homemaking Department, Michigan State University, College of Education, East Lansing, Prof. Ser. Bulletin No. 41	1959
	Planning the Instructional Materials Center for Elementary and Secondary Schools—Bulletin No. 422	1958
	School Playground Safety—Bulletin No. 1028	1957
	Planning Together For Better School Buildings—Bulletin No. 412 (Revised)	1956

Minnesota	Guide For Educational Planning of School Buildings and Sites in Minnesota	1957
Mississippi	Standards of the Mississippi Accrediting Commission	1960
	Pre-Planning	1957
	Some Selected Criteria for the Selection of School Sites	1954
	Standard Toilet Facilities	1952
	Fire Escapes and Public Safety Laws—Recompiled	1942
Missouri	Composite General Shop	1961
	Planning Facilities for Vocational Agriculture Departments	1957
	Regulations and Code Governing Sanitation of Schools	1948
	Schoolhouse Planning and Construction	1946
	Steps to be Followed in Initiating and Carrying Through A School Building Program	——
	Education for Living—Planning and Equipping the Homemaking Department	——
Montana	School Environment—Guide, Laws and Regulations—Montana State Board of Health	1957
Nevada	School Plant Planning Guide	1961
New Hampshire	Guide For Planning The Construction of New School Buildings	1952
New Jersey	Schoolhouse Planning and Construction—A Guide	1961
New Mexico	Uniform Building Code	1958
New York	Planning the Indoor Physical Education Facilities (7)	1962
	Fire Escapes and Stair Towers for Existing Schools	1961
	School Lighting Standards (Revised)	1961
	Planning for Mechanical Safety in School Buildings (Tentative)	1960
	Schools as Community Centers (1)	1960
	Planning For Safety in School Buildings (12)	1960
	The School Site and Development of School Grounds (14)	1960
	School Building Projects (17)	1960
	Planning Science Facilities for Secondary Schools (19)	1960
	Planning and Equipping the Homemaking Center (20)	1960
	School Site Standards	1959

	School Bus Garage Recommendations (Rev.)	1959
	Notes on Heating and Ventilation Regulations	1959
	Planning Schools For Use of Audio-Visual Instructional Materials (8)	1959
	School Building Requirements	1958
	Planning Facilities to Accommodate Adult Education (23)	1958
	Planning the Elementary School Plant (4)	1957
	Planning Building Facilities for Vocational Agriculture (5)	1957
	Sanitary Facilities in School Buildings (11)	1957
	Rules for Computing Square Footage and Cubage	1955
	Planning the Art Room for Secondary Schools (21)	1954
North Carolina	Guidance (Facilities)	1962
	Home Economics (Facilities)	1962
	Language Center (Facilities)	1962
	Science (Facilities)	1962
	Minimum Check List for Mechanical Plans and Specifications	1962
	School Lunch	1961
	Educational Planning	1961
	Instructional Materials	1961
	Sites and Physical Education	1961
	Fire Safety, Publication No. 329	1959
	Educational Planning—A Guide	1958
	North Carolina Laws Relating to Public School Construction	1958
	Science Facilities For Today's High School	1957
North Dakota	Characteristics of a Good School Building	1961
	Manual for North Dakota School Buildings (revised)	1956
Oklahoma	Annual Bulletin For Elementary And Secondary Schools	1960
Oregon	School Building Survey for Fern Ridge Sch. District No. 28j, Lane County	1962
	School Plant Report—Monmouth—Independence Sch. Dist. No. 13j	1962
	Standards for Elementary Schools (Also Secondary)	1959
Pennsylvania	Johnny Gets a Schoolhouse—Educational Research Monograph Number 4	1960
	The School Plant Guide for Planning School Plants of Pennsylvania (Revised)	1959
	Physical Education (311)	1956

	Equipment and Layout of Business Education Department (271-A)	1955
	Education for Homemaking in the Secondary School (Revised—320)	1955
	Industrial Art Series	1953–55
	Course of Study in Art Education (262)	1951
	Vocational—Industrial Education in Pennsylvania (330)	1951
	Course of Study in Science for the Secondary School (400)	1951
South Carolina	Recommendations for School Health Service Unit With Suggested Plans (Revised)	1961
	Public Health Laws, Rules and Regulations Relating to School Health	1960
	School Building Regulations for South Carolina	1957
	Suggestions for School Lunch Program Food Storage Units	1954
	Guide for School Plant Lighting for Registered South Carolina Electrical Engineers (Revised)	1953
	Suggestions for School Library Space	1951
Tennessee	Rules and Regulations, Part III, Governing New Sites, New Buildings, Major Repairs, and Equipment for Schools	1961
Texas	School Plant Services	1962
	Planning An Elementary School Building Program	——
	Pre-Planning of School Plant Facilities	——
Utah	SCHOOL PLANT PLANNING SERIES	
	Planning A School Plant—The Educational Specifications	1956
	Planning A Program of School Plant Construction	1956
	The Planning of School Food Service Facilities	1956
	Planning the Elementary School Plant	1957
	Planning Facilities for Vocational Agriculture	1958
	Planning the Secondary School Plant	1958
	Planning Industrial Arts Facilities	1959
	School Furniture and Equipment	1959
	Planning Facilities for Special Education	1960
	Planning Physical Education and Health Education Facilities	1958
	A New Approach to School Building Cost Comparison	1957
Vermont	Building Better Schools for Vermont	1958

Virginia	School Planning Manual	1959
Washington	Adopted—Guide For Planning School Plants, National Council on Schoolhouse Construction	1958
West Virginia	Handbook on Planning School Facilities	1962
Wisconsin	General Building Codes (From: State Industrial Commission, State Office Building Madison, Wisconsin)	Current
Wyoming	Minimum Standards for the Sanitary Environment of Schools in Wyoming	1962
District of Columbia	Elementary School Design	1961

	YES	NO
4. Do you have suggested layouts for specialized space-areas?	19	23

5. List major areas of state school plant assistance.

The areas of service were basically the same in all states with the differences related to the size of the staff.

6. Title and date of your latest State School Plant Code, Standards, Regulations, and/or Guide.

This information has been included under 3 above.

7. Other services or suggestions.

The comments received are quoted as follows:

a. Manuals for maintenance.
b. State services should concentrate more on research and dissemination of research findings in the schoolhousing field.
c. More money needed.
d. More staff needed.
e. Conducting EFL (Ford Foundation) projects.
f. Civil defense program for the state.
g. Repair and maintenance of 75% of state schools.
h. Plant personnel training.
i. Inspection of buildings.
j. Supervision of building maintenance.
k. Educational specifications.
l. Financing school plant facilities.
m. Custodial schools in each county.
n. Field visits, surveys, and conferences.
o. Articles in newsletters, magazines, etc.
p. Part of academic team on curriculum or general survey.

Your State Services Committee wishes to extend its appreciation and to acknowledge the 100% cooperation of all of the school plant service chiefs of the fifty states, the District of Columbia, and the Territory of Puerto Rico.

G. B. NORDRUM, Chairman
DONALD O. BUSH
J. L. PIERCE
G. W. REIDA

PROFESSIONAL TRAINING

First I would like to express appreciation to the members of the Professional Training Committee. Our contacts include a session at the AASA Convention in Atlantic City, three sessions here in Denver, plus correspondence during the year.

Our major action project this year has been the preparation and distribution of the *Directory of Members of the National Council on Schoolhouse Construction*. It identified the geographical locations of members of the Council. Its primary purpose was to provide directory information regarding professionally qualified school planning personnel who could assist with conferences, workshops, clinics, and other meetings. Distribution was made to presidents of educational administrators' associations throughout the United States. Copies were also sent to other selected personnel. It was the feeling of the committee that the publication might give the Council a bit of a boost in status as well as contribute as a personnel resource guide. The committee wishes to clearly state that distribution of the *Directory* did not in any way personally commit members as consultants.

Your participation in connection with our "Instant Survey" which was completed yesterday is appreciated. Although time has not permitted a tabulation, it seemed, when glancing through, that several good ideas were expressed. We will consider the material when developing projects for the future.

May we chat a little about some of the thoughts which came to mind during our committee deliberations? It seems reasonable to assume that as a National Council, we are not interested so much in professional training as we are in planning accomplishments. It makes sense, however, that good performance must be preceded by quality professional preparation. In our work as a committee, we have no legal authority to stimulate action; therefore, we must rely upon what might be termed the leadership of ideas. There are many roles which have impact for school planning. If a list were made, it would likely include school district personnel, governmental agencies, colleges and universities, industry, architects, contractors, and what might also be termed an agency—the community. It is suggested that the person having the greatest effect on the planning of educational plants is the superintendent of schools. Let's look at his role. As an administrator, his job is to see that goals are identified and attained. The superintendent is an administrator, not a planning technician. If he serves in the latter capacity, he is probably functioning as an amateur. No disrespect is intended, for it is well known that in many instances the chief administrator has to be all things to all people. The effective superintendent identifies and makes use of the many available resources.

While considering the matter of college or university training for school planning, several questions were raised. Should training programs differ for superintendents, assistant superintendents, or professional school planners? The answer was, it would seem so. An administrator needs to know how to obtain and use competent planning services; on the other hand, the professionally trained school planner needs depth in technical know-how.

Professional training objectives should include the architect. It is recognized that professional planners of educational buildings need special training. They should be constantly involved in talking with educational personnel.

It's difficult to identify a professional training project for industry. It is recognized, however, that this field of endeavor has made tremendous strides. We must continue to communicate with industry regarding our needs, and cooperate to every extent short of product endorsement.

Our committee feels that an effective professional training program should consider the need for good public relations. Without question, progress in the planning of schools hinges directly on public support. It has been so well stated that the public reacts on the basis of the way things seem, not necessarily how they are. Progress requires consistent and thorough communication.

A sociological factor with which we must contend is resistance to change. People like the status quo because within it they find comfort. School administrators and boards of education need information and encouragement which will permit utilization of new ideas. Change should not be for change's sake, but for progress. It has been said many times that the greatest deterrent to progress is the resistance of people to change, including ourselves.

Something exciting about the '60's is the "breakthrough" climate within which we find education. The '50's emphasized quantity with quality. Now we have new methods of instruction, new materials, new design, and fortunately in many instances, new courage to move ahead. People are interested in education. They are demonstrating their attitudes daily. It is a wonderful situation—the best we've ever had if we can weather it. It is proposed that current public climate will support progress if we can keep the ideas and energies organized.

Professional school planners must work more effectively with instructional personnel. The planner need not be an expert in curriculum, but he must be skillful enough to identify key personnel in the instructional field and see that educational specifications are written in such language that the architect can design to effectively support the educational process. It is recognized that reticence to make commitments on the part of the instructional staff presents a problem. New developments and ideas for change have to some extent placed them in a state of flux. Realistically though,

enrollments turn schedules into statistics, and school districts must of necessity be ready when the children appear. Good planning is therefore essential.

Having submitted a few ideas for your consideration, let's now turn to the project areas for our Professional Training Committee. Being a small group with limited time, we feel our efforts must be spent on "planting seeds." The progress of our work will be geared closely to our ability to communicate. Projects might include surveys to identify the status quo of professional planning activities. It is felt our committee could stimulate the preparation and distribution of "impact" literature. Another area in which we have already made a preliminary contribution is the stimulation of "impact" conferencing. We respond to the suggestion that resource outlines and encouragement to offer school planning courses be provided for colleges and universities. We consider as an overall objective that of doing anything we can to provide information and inspiration which will boost the threshold of professional training with the ultimate aim being the same as the Council's—good performance in planning schools.

M. Ted Dixon, Chairman
Leonard Walsh
Ray Hamon
Henry Rissetto
Bill Prentice

RESOLUTIONS

1. The Council expresses its regret and sorrow at the death of valued colleague and long-time member, J. B. Calhoun of Nashville, Tennessee.

2. The Council expresses its sincere thanks and appreciation to the following committees and persons:

   The Committee on Local Arrangements: Robert M. Cochrane, Chairman; Charles D. Armstrong; Harold E. Moore. The thoughtful and hospitable provisions of facilities and services, including the tours to schools and points of interest, contributed greatly to the success of the Thirty-Ninth Annual Meeting.

   The Ladies' Committee: Mrs. Robert M. Cochrane, Mrs. Charles D. Armstrong, Mrs. Harold E. Moore. The efforts of this committee

assured the delight and enjoyment of the wives of Council members during this sojourn in Denver.

Hon. Byron W. Hansford, Commissioner, State Department of Education, who welcomed the Council to Colorado; Kenneth E. Oberholtzer, Superintendent of Schools, Denver, Colorado, who welcomed us to Denver; Dr. Robert S. Gilchrest, Superintendent of Schools, University City, Missouri, who made the opening address.

3. The Council voices a special vote of thanks to the school boards and the administration of Arapahoe, Jefferson and Denver Counties for their contributions to the meeting, and their kind hospitality.
4. The Council recognizes and appreciates the great effort and effective work during the past year of the Council officers, committees and liaison representatives and expresses appreciation for their good work.
5. The Council expresses its appreciation for the efficiont service rendered by the Secretary-Treasurer, Floyd G. Parker; the solvent condition of Council finances and for the excellent newsletter.
6. The Council recognizes and appreciates the great amount of work and research which has been done for the past nine years by the Task Force Committee on School Lighting. Sincere appreciation is expressed to the IES and AIA who along with NCSC have participated in the committee work. The results of their study in the field of lighting constitutes a great scientific contribution and the Council hopes that the results of these studies receive wide distribution and active participation by the Council and applicable societies.
7. The Council wishes to give recognition and thanks to the many individuals who write and edit the guides and related publications for the Council.
8. The Council wishes to encourage area or regional organizations in their work in the field of schoolhouse planning and construction and encourages them in their meetings, studies and contributions to the field.
9. The Council membership urges the Executive Committee to give consideration to securing funds for the purpose of establishing workshops, clinics, seminars and related activities in the field of schoolhouse planing and construction.
10. The Council recommends strongly that all future publications of the Council be copyrighted in the name of the Council.
11. The Council commends the practice of including a reception for new members as a part of the program of the Council meeting. The Council further recommends that the new members wear a distinguishing badge.

J. A. ANDERSON, Chairman
G. G. BAILEY
W. R. FLESHER

3

LIAISON REPORTS

ASCD

ASA

AIA

ASBO

IES

ASHRAE

ASSOCIATION FOR SUPERVISION AND CURRICULUM DEVELOPMENT

The ASCD is an old organization which has grown since World War II as the specialization of curriculum directors itself has grown. On its board of directors it has representatives from every state but Alaska, Delaware and North Dakota. Its membership is heavily laden with professors, although the proportion is not immediately available. Some idea of the proportion of members can be found in the scheduling of the "job-alike" groups at the annual convention. There are 82 groups in all, divided as follows: State Education Department, three; professors and deans, fifteen; superintendents and general administrators, four; curriculum directors, eleven; elementary curriculum directors, six; general supervisors, nineteen; subject supervisors (e.g., science, language), ten; principals, ten; classroom teachers, three; and lay groups, one. This will give a rough idea of the distribution of the membership, at least of the attendants at the convention.

The ASCD has a long history of providing leadership in considerations of curriculum and in supervision and help of teachers. It has a monthly publication, "Educational Leadership," which is basically a forum in these fields. In my earlier years I regarded this as one of the organizations which provided the conscience for public schools. By this I mean that they devote themselves exclusively to the central task of teaching and learning.

Its convention last March was held at Las Vegas. I doubt whether there are many educational groups which could hold a convention there and expect the full attention to business that characterized this group. People earnestly and conscientiously attended sessions. The convention consisted of general meetings, area meetings, assemblies, and job-alike group meetings. This is a hard-working group and there are only five general sessions.

This association has a formal ad hoc liaison with the Book Publishers Council and a continuing coordinating committee with the Department of Audio-Visual Instruction. The two standing commissions with which we should be abreast are the Instructional Materials Commission and the new Commission on Coordination of Educational Resources. They have very little direct feeling about plant or major equipment at the moment.

The tone and general feeling at the convention confirmed my opinion that this group, once regarded by traditionalists as too progressive, is now playing a conservative role in education. At superintendents' conventions and principals' conventions you will hear a good deal about team teaching and departmentalization and ability grouping. This group is much better acquainted with research in the field and consequently slower to accept new gimmicks and gadgets in education, particularly in curriculum.

As of now it appears that the most useful liaison will continue to be a report to our group on the general thinking about curriculum and organization by the ASCD. I hope the day will come when we can influence ASCD to take a more lively interest in the environment and tools of education, in which case we may have a more effective role to play.

ARCHIBALD B. SHAW

THE AMERICAN STANDARDS ASSOCIATION

An American Standard is a standard for voluntary national application which has been approved by the American Standards Association.

Founded in 1918 by five leading American engineering societies as a nonprofit public service organization, ASA now has 122 organization members and over 2,000 company members. In addition, about 500 other associations and interested groups participate in standards projects organized under ASA procedures, though they are not members. These various members and participating groups represent all important sectors of the nation, including industry, labor, government, engineering, science, insurance, public health, distributors, and consumers.

The main types of standards developed under the listed projects are:

1. Definitions, terminology, graphic symbols, and abbreviations;
2. Standards of size, weight, volume, and rating;
3. Standards of quality, composition, and performance for materials and products;
4. Methods of testing, analysis, and rating;
5. Standards of practices, procedures, safety, and health.

American Standards come into existence through three basic methods.

1. **Sectional Committee Method.** A committee, composed of representatives accredited for the purpose by all groups and organizations substantially concerned with the scope of the standards project and organized under the rules of ASA for such committees, formulates the standard. The special utility of the method consists in the pro-

vision, in advance, of such representation that a consensus will be assured and self-evident when the members have approved their completed assignment.

2. **Existing Standards Method.** Under this method, an existing standard may be submitted for approval by any responsible body, and may be approved by ASA provided:
   (a) It is shown that the standard is supported by the necessary consensus of those substantially concerned with it.
   (b) It does not conflict with any other American Standard.

Approximately one-third of the standards approved by ASA have been considered under this method.

3. **General Acceptance Method.** Comparatively simple standards that do not require prolonged committee work can be approved at a general conference of all groups vitally concerned with the scope of the standard. The conference action is finalized through letter ballot action to establish the existence of the consensus required for approval by ASA. More than 1,800 American Standards have been approved. Each American Standard is reviewed at least once every five years, at which time it is reaffirmed, revised, or withdrawn.

LIAISON REPORT

The working relationships between the National Council on Schoolhouse Construction and the American Standards Association are of two kinds:

1. **Cosponsor of an American Standard**

   The National Council on Schoolhouse Construction, the American Institute of Architects, and the Illuminating Engineering Society are cosponsors of Project A23 School Lighting. The Council is represented by Charles Gibson, and your liaison representative is a member of the Sectional Committee. A detailed report of the activities involved in this project will be presented to the Council by Mr. Gibson.

2. **Representation on Sectional Committees**

   In addition to Project A23 mentioned above, your liaison representative has served on Sectional Committees for the following projects:

   a. *A117 Facilities in Public Buildings for Persons with Physical Handicaps.* The recommendations of the Sectional Committee were accepted and adopted American Standards are available.

   b. *A88 Specifications for the Installation of Oxychloride Cement Flooring.* This project has been withdrawn and will be dealt with in the future by the American Society for Testing and Materials, as Pro-

prietary Sponsor, through ASTM Committee C-2 on Magnesium Oxychloride and Magnesium Oxysulfate Cements.

c. *A121 Specifications for Neoprene and Chlorosulfonated Polyethylene Roofing Solutions for Building Construction.* By a vote conducted on March 19, 1962, these specifications were adopted as an American Standard.

Recommendations:

1. That the National Council on Schoolhouse Construction continue its close liaison activities with the American Standards Association.
2. That an effort be made to have the Council represented on the Sectional Committee of Project A53 Building Code Requirements for Light and Ventilation.
3. That a study be made to determine the desirability and feasibility of securing representation of the National Council on Schoolhouse Construction on the Construction Standards Board of the American Standards Association.

JOHN L. CAMERON

AMERICAN INSTITUTE OF ARCHITECTS

The Committee on School Buildings and Educational Facilities (CSBEF) of the American Institute of Architects, Eric Pawley, staff executive, continues its active interest and participation in all phases of school plant planning activities.

Your liaison representative attended a meeting of the Committee in Atlantic City on February 16 and has frequently conferred with individual members on matters of common interest.

Representatives of this committee attended both the UIA Commission on School Buildings in Mexico City and the UNESCO International Educational Building Conference in London, and exhibits of United States schools were presented at both conferences.

Since the last report to the Council the following School Plant Studies have been published: No. 47 and No. 48, by Pawley, small schools; No. 49 by Lopez, educational specifications; and No. 50 by Obata, mind, body

and stimuli, due in October. A compilation of 40 selected separate studies covering the period 1952-1962 is available through Mr. Pawley.

More recently your representative has worked with committee members and representatives of other organizations in developing recommendations for establishing a research clearing house for school facilities in the school housing section of the U. S. Office of Education.

At this time Reid moved that the following resolution be adopted. Seconded by McGuffey. Motion passed.

RESOLUTION TO U.S. OFFICE OF EDUCATION

Whereas representatives of national organizations, associations, and agencies having particular interests in school facilities have held joint meetings on several occasions in the past few years to consider the matter of research in school facilities; and

Whereas agreement has been reached as to the importance and necessity of there being established a clearing house for the collection, dissemination, and encouragement of school facilities research; and

Whereas there is general agreement that the U. S. Office of Education is the only appropriate agency to operate a school facilities research clearinghouse;

Therefore be it

Resolved, that the Administrative officials and the Congress of the United States be urged to provide the resources necessary for the development of a school facilities research clearinghouse in the School Housing Section of the U. S. Office of Education.

JAMES L. REID

ASSOCIATION OF SCHOOL BUSINESS OFFICIALS OF THE U.S. AND CANADA

The 1961 Annual Convention of the Association of School Business Officials of the United States and Canada was held October 7-12, 1961, in Toronto, Ontario, Canada, with an approximate membership of 2500, and 2690 actually registered.

The Association has committees working on twelve areas of School Business Administration; within this number are the committees on Maintenance and Operation and Schoolhouse Planning and Construction.

The 1962 Dallas meeting will hear a report on the obsolescence of school plants. Those phases included in the study are: building, the educational efficiency, and the site and location. Dr. E. G. Sessions of Ohio State University is heading this study.

The board of directors of ASBO have approved the preparation of a brochure, "The Role of a School Business Official on School Construction," by the Research Committee on School Planning and Construction. This committee is preparing the materials now. Other interesting allied school plant studies include "General Obligation on School Bonds" by the research committee.

A closer examination of the separate programs of NCSC and ASBO seems appropriate. Joint efforts on interests of common concern might strengthen both organizations.

In conclusion, I suggest that a specific effort be made to coordinate the efforts of NCSC with the Committees on Schoolhouse Planning and Construction, the Obsolescence of School Plants, and Maintenance and Operation of ASBO.

N. L. GEORGE

ILLUMINATING ENGINEERING SOCIETY

It has been my privilege to serve as the National Council's liaison representative to the Illuminating Engineering Society for the past fourteen years. Each of those years I made a report to this organization. Through this report you were kept aware of the significant activities of the Illuminating Engineering Society which had some relationship to matters of National Council concern.

For the past eight years, my report has recounted the sometimes smooth, sometimes stormy course of the work of the Joint Task Committee on School Lighting. Certainly during the tedious process of resolving differences in points of view among the three working groups of the Illuminating Engineering Society, American Institute of Architects, and National

Council and arriving at commonly acceptable positions, there were times when only a word or two stood between continuation or collapse of our joint effort. It was at such times when the statesmanship of committee members John Chorlton, Bill Clapp, Henry Wright, Cash Crouch, Ray Hamon, Everett Strong, John McLeod and Jim Reid was exerted to reach the compromise, restatement, or modification of emphasis needed to keep the Joint Committee struggling toward its goal. There really were some close ones.

Today, however, we are not here to talk about near misses. We are not here to talk about a hit. In fact, we are not prepared to say we have produced any final document of lasting worth. Certainly there is nothing basically new or startling in the recently published American Standards Association *Guide for School Lighting*. Really, the only startling thing about this document is that it got published at all!

It lays down no new laws. It reflects no unpublished research. It preaches no new doctrine. Its greatest claim to fame is that what it does contain has been accepted as a planning guide by the three major organizations most directly concerned with the provision of an adequate visual environment in our nation's schools.

Even that advantage will be only imaginary if members of this Council don't take it seriously enough to make it a working tool in their trade.

Since we created a document of principles rather than standards—since the essence of the new guide lies in its concept of planning by judgment and choice—it can never become a working tool of our profession until we make the effort necessary to apply the principles it espouses.

As a Council we insist upon each member's right—in fact, responsibility—to make his own choices based on the soundest judgment he can exert after considering intelligently all the interrelated factors in a problem. You now have the tools through the new ASA Guide and through the field analyses of typical lighting installations presented yesterday by Foster Sampson, to assist you in making sound choices for future planning, and to enable you to know the efficiency of visual performance of the systems you have already installed. We are at last in a position to make choices with a full knowledge of what we are buying and how much we are paying for it. We have no further excuse for the repetition of our past mistakes.

Each proposed lighting solution should be evaluated against two simple check points: What does the *eye* see (direct glare)? What does the *task* see (reflected glare)?

Since we see only because of contrast within the task, and since a high percentage of visual tasks in schools are viewed in a "heads down" position, the choices of lighting systems should be weighted, in my opinion, toward obtaining the highest contrast possible within the task. We hope to publish simple performance specifications for lighting systems in our new National

Council Guide which will make it possible for all concerned to obtain a good and economical visual environment for schools coming under our various planning jurisdictions.

As a final word about the school lighting efforts of our Council, and in order to bring the matter before our President and Executive Committee for consideration, I would recommend that the National Council authorize a continuance of membership in the Joint Task Committee for School Lighting. This continuance is necessary to further cooperative efforts with the AIA and IES in this important area of common interest.

Although not strictly in line with duties as a liaison officer to the IES, my activities in the general field of visual engineering include membership on the Executive Committee of the Illuminating Engineering Research Institute. This institute, although receiving the bulk of its funds for research from members of the lighting industry, is an independent agency operated by noncommercially connected persons like myself apart from the management of the Illuminating Engineering Society.

During the past year I have attended a meeting of the IERI Executive Committee and will sit again with that group at Penn State Sunday through Wednesday of next week. At that time we will receive progress reports on research now under way and will screen, budget and assign new research projects to major university engineering departments. Much of the research upon which our new school lighting document is based was financed by the IERI.

At our next Council meeting I hope to bring to you a summary of IERI-sponsored research which should be of interest to you.

In closing this yearly report, I would like to thank in the name of our Council, all those persons who made possible the demonstration classroom at the Emily Griffith Opportunity School: Robert Cochrane, Colorado Dept. of Education; Harold Rankin, Public Service Co. of Colorado; Graham Miller, Denver Public Schools; T. A. Nelson, Pittsburgh Plate Glass; Erik Madsen, Levolor-Loritzen Venetian Blind Co.; Mr. Blanton, Duratex Blind Co. of Denver. No one should leave Denver before he visits this remodeled classroom and examines the electric lighting system and daylight controls demonstrated in it.

Foster Sampson, Cash Crouch and I made some simple measurements in that classroom yesterday and found the visual environment exceptionally good, especially considering the fact that no repainting had been done as a part of this demonstration. When one realizes the electric lighting system installed is basically an indirect system, one can readily understand that better lighting results would have been obtained if the ceiling had been brought up by repainting to a recommended reflection factor. We did not ask that this be done and are not in any way criticizing anyone

connected with this project. I would recommend, however, that the ceiling be painted with as high a reflection factor white matte paint as soon as possible, before any final brightness foot-candle information is released.

As a matter of interest for those of you who already have visited room 306, the average foot-candles obtained read 78, composed of 67 from the electric lighting system and 11 from controlled daylight. The fixture brightness met the requirements of the scissors curve and, best of all, the contrast in the task was .515, which was better than the contrast recorded by Blackwell under laboratory conditions.

The northwest sky at 12:45 p.m. with the window raised registered 1850 footlamberts. When the window was lowered and the same segment of sky measured, through the neutral grey low-transmission glass, sky brightness of 290 footlamberts was recorded—thus indicating an approximate 16 percent light transmission. The glass is officially rated as a 14 percent transmission but our calculations were close enough under field conditions.

The preset, audio-visual blinds work out perfectly as both daylight control for the clear glass upper window and as darkening devices for projection purposes. We couldn't get any light reading on our meter when they were completely closed.

This demonstration classroom was not set up as a model for Council members to follow. It represents only one of a number of possible ways a space of that geometry and general design could be laid out to give a highly acceptable visual environment.

We trust that you have been sufficiently stimulated by our stories and demonstrations to go home and make some serious efforts to guarantee better visual engineering for the school design which you can influence.

CHARLES D. GIBSON

AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS

Besides having their semi-annual meetings in February in Chicago and Miami in June, the American Society of Heating, Refrigeration and Air Conditioning Engineers have plunged into a direct project in Pinellas County, Florida. The Society was considering a research project at Purdue University on thermal conditions in schools, but this project never materialized. When the Pinellas County project presented itself, the Society was in a very good position to accept this research project and further develop it.

The Pinellas County project was initiated originally under a grant from the United States Office of Education and provided for measurements over a period of a calendar year, including both a summer session and the regular school term in junior high schools in Pinellas County, Florida. The full grant provided for preliminary studies to perfect the test instruments, extending over most of the academic year preceding the year 1961-62, during which the measurements were taken; and an allowance of a year following this period for analysis of the measurements in preparation of a report. ASHRAE decided to support an extension of the measuring period for an additional summer session and an additional academic year, thus doubling the period of measurement and providing for replication of the results. This extension of a year will also permit modifications of the test procedure if preliminary analysis of the first year's data indicates this to be desirable.

Pinellas County Board of Public Instruction was to direct the operations of the project, Florida State University contracted for the participation of Dr. Hazen A. Curtis for the supervision and interpretation of the data.

Two ASHRAE consultants were assigned to the project, Dr. Ralph G. Nevins of Kansas State University and Dr. L. P. Greenhill of Pennsylvania State University.

The amount of the grant was $8,750 from 1961-62 and $125,760 in 1962-63. Overall supervision of the project is assigned to the ASHRAE Tech. Com. 1.4 on Physiology and Human Environment of which Mr. A. S. Gates, Jr. is chairman.

Following are general topics of research:

1. Educational outcome
2. Cost of operation
3. Man—How—Use
4. Determination
5. Statement of Health
6. Statement of Attendance
7. Comfort voting by students
8. Impact of student factors, building factors, and overall plant upon visitors
9. Inventories of personal reactions by students and by teachers
10. Miscellaneous

Anyone desiring more information concerning this test data, please write to me or contact a director of ASHRAE in your local area.

Some additional information concerning this test will probably be available at our next session. I, for one, am sorry we could not be sponsoring this test information with ASHRAE.

WILLIAM FOUTZ

EXECUTIVE COMMITTEE MEETINGS

MEMBERSHIP REPORT

INVITATION TO PRINCETON

EXECUTIVE COMMITTEE MEETINGS

October 7, 1962

The meeting was called to order by President Taylor at 9:00 a.m. with the following members present: Stoneman, Grimes, Beck, Tjomsland and Parker. The Secretary read the minutes of the Executive Committee session which was held in Atlantic City in February, 1962. Reid moved and Beck seconded the approval of the minutes.

Robert Cochrane joined the Executive Committee at this time and was asked to discuss the plans for the Denver meeting which was to begin the following day. The printed program was presented to the committee and time was taken to discuss each item on the program. Cochrane indicated that he would provide for the reception of new members as scheduled on the program.

The meeting adjourned at 11:00 a.m.

October 7, 1962

The Executive Committee was again called into session with all members present at 1:30 p.m.

Secretary Parker presented the report of the Secretary-Treasurer (see copy in the Proceedings of the 39th Council, 39th Annual Meeting under Executive Session). Tjomsland moved, and Stoneman seconded, the acceptance of the Secretary's report.

Discussion developed as to the policy of the Council relative to paying honorarium and expenses for special speakers on the annual program. Stoneman moved, and Tjomsland seconded, that Dr. McFarland be paid expenses per diem for his presence at the annual dinner meeting of the Council. The motion passed.

In a review of Council activities by Executive Committee members during the past year, the cost of travel expenses was discussed. Grimes moved, and Tjomsland seconded, that Merle Stoneman's expense to Mexico, and Charlie Gibson's expense to attend the Regional Lighting Meeting in Dallas, Texas, be authorized. Motion passed.

At this time the names of the candidates for membership were read and considered by the Committee. Following a discussion of the 27 names submitted, it was moved by Reid, and seconded by Beck, that all names read be accepted for membership and that they be submitted to the Council for consideration. Motion passed.

A motion was made by Reid, and seconded by Tjomsland, that the Secretary send a follow-up letter to each candidate immediately upon receipt of the candidate's application for membership. Candidates should be considered the guests of the Council and the sponsoring member until their membership status is finally approved by the Executive Committee and the Council at large. Motion passed.

Parker discussed the Newsletter and suggested that an effort be made to improve this document during the coming year. The possibility of printing or duplication in an effort to give the Newsletter a professional appearance was suggested. It was moved by Reid, and seconded by Grimes, that Secretary Parker be authorized to use a maximum of $150 to improve the Newsletter. Motion passed.

The general layout and cover page of the Annual Proceedings was discussed. It was recommended by Parker that an effort be made to improve the general layout of the Annual Proceedings, including the cover page. By consent of the Executive Committee, Secretary Parker was authorized to investigate the possibilities for this project. Any suggestions for changes in the Proceedings will be sent to the members of the Executive Committee before publication of the Proceedings.

Discussion followed regarding the status of the Educational Facilities Laboratory as liaison organization with the National Council. It was determined that liaison activity was no longer necessary since the President of EFL was now a member of the National Council.

Reid discussed the proposal for the development of a clearinghouse for school facilities research activities and proposed that such a center be developed in the U. S. Office of Education. The purpose of such a center was to provide an agency in which all organizations could channel their research activities and information in order that the information might be properly disseminated to organizations and agencies desiring such information. Such a center would provide opportunity for liaison with colleges, universities, governmental agencies, local schools and others concerned with research in the area of school facilities. It was proposed that such information be inventoried, catalogued, and disseminated through such a center. It was moved by Grimes, and seconded by Beck, that Jim Reid present a report of the clearinghouse committee to the Council membership. The motion was approved and the report was scheduled on the annual program.

Reid reported on the sample survey which he made of National Council members during the past year. Of 32 replies received from 85 questionnaires sent to sample members it was indicated that: 1) members were generally satisfied with meeting places of the Council; 2) long-term planning was urged, however, a degree of flexibility should be maintained; 3) Council members need more specific information in special areas such as lighting;

4) a majority of the members do not prefer to raise the dues for membership in the Council; 5) the Council was obtaining very satisfactory leadership within its officers and committees; and 6) a greater effort should be made to involve the total membership in activities of the Council.

Reid reported on the 1963 meeting plans. Because of the inability of the Princeton Inn to carry out a building construction program during this year, it was indicated that not all of the Council members could be housed in the single facility. A hotel in the immediate area would be pleased to provide the additional needs of the Council. It was the consensus of the Executive Committee that plans should continue as previously made to meet at the Princeton Inn in October, 1963.

The meeting adjourned at 5:30 p.m.

October 8, 1962

The meeting was called to order by President Taylor at 8:30 a.m. with all members of the Executive Committee present.

At this time Don Bush was asked to join the Executive Committee to present a report on a study of the Council membership. (See Membership Report at the end of this section.)

The members of the Research and Publications Committee, including Chairman Tonigan, McGuffey and Fowler, met with the Executive Committee to present and discuss the report of this committee. (See report of Research and Publications Committee.)

G. B. Nordrum, Chairman of the State Services Committee, met with the Executive Committee to discuss the activities and reports developed by that committee during the past year. (See report of State Services Committee.)

A discussion developed relative to the Bylaws of the National Council. After some discussion it was moved by Grimes, seconded by Beck that the President-elect be empowered to appoint a special committee to study the Bylaws of the Council and to make a report to the Executive Committee as soon as possible during the coming year. The motion passed.

Ted Dixon met with the Executive Committee to discuss the activities of the Professional Training Committee. During the past year this committee made a survey of the membership, and as a result of that survey, developed a mimeographed report which was presented to the Executive Committee. Dixon presented a statement for the cost of the mimeographed publication. Reid moved, and Grimes seconded, that the bill for the amount of $37.12 as presented by Mr. Dixon, be approved. The committee approved.

The Executive Committee adjourned at 12:15 p.m.

October 8, 1962

President Taylor called the Executive Committee meeting to order at 2 p.m.

The purpose of this session was to discuss the program for the 1963 and 1964 annual meetings. Reid proposed the possibility of separate or divisional meetings in elementary, secondary and higher education to run concurrently during the 1963 ssesion. It was suggested that a questionnaire be developed and distributed to the entire membership during the Denver meeting in order that an opinion can be obtained relative to this proposal.

President Taylor adjourned the meeting at 4:30 p.m. with the understanding that the Executive Committee would again meet Thursday morning at 7:30 a.m.

October 11, 1962

The meeting was called to order by President Taylor at 7:30 a.m. with all members of the Executive Committee present.

Discussion developed relative to the activities of the Lighting Task Committee. Reid moved, and Beck seconded, that the tenure of the office of the Lighting Task Committee be extended for one more year. The motion was approved.

A statement for the amount of $204.80 was presented by Steve Knezevich for preliminary typing and clerical work on the revised *Guide*. Tjomsland moved, and Stoneman seconded, that the Secretary be authorized to pay the statement presented by Knezevich and further that the Secretary carry the cost of *Guide* publications out of the General Fund until such time as funds are needed from the savings account. The Secretary was authorized to draw from the Council savings account at such time as the publication cost of the revised *Guide* demands such action. The motion passed. It was suggested by Secretary Parker that a separate ledger account be set up in the Secretary's office for the purpose of keeping an exact recording of the cost of the revised *Guide*. The Executive Committee consented to such action. It was further recommended that the Chairman of the Research and Publications Committee approve all statements for expenses for the revised *Guide* previous to action or presentation to the Council Secretary. This action was approved.

The name of Wilbert Vestnys was presented to the Council as a candidate for membership into the Council. It was moved by Grimes, and seconded by Reid, that the name of Wilbert Vestnys be presented to the Council for consideration. The motion was approved.

After lengthy discussion relative to the 1964 location of the Council annual meeting and a thorough consideration of the many invitations extended by Council members and others, it was moved by Beck, and seconded

by Grimes, that the 1964 meeting be held at Houston, Texas. Glenn Fletcher was designated as Chairman of the local planning committee for the 1964 annual meeting.

Tonigan, Chairman of the Research and Publications Committee, again met with the Executive Committee. McGuffey and Fowler, members of the committee, were also in attendance. Tonigan recommended several additional publications that should be considered for future activity of the Council. It was moved by Reid, and seconded by Beck, that the Research and Publications Committee be authorized to proceed with plans for a publication on "The Effects That School Plant Planning and Construction Have Upon Maintenance and Operation of School Facilities." The motion carried.

It was agreed that the Executive Committee would meet in Atlantic City on February 17, at 10 a.m., in the Michigan State University suite at the Traymore Hotel, for the purpose of considering the general business and activity of the Council.

The meeting adjourned at 8:50 a.m.

A SPECIAL MEMBERSHIP REPORT

At the request of President Taylor, a special study was made of "Membership requirements with the purpose of recommending changes, if any, in your opinion, are needed, and the number of members by states and recommended procedures for getting new members in states with none or few members."

A map of the U.S.A. and Canada showing the actual location of members was prepared by James Reid. A preliminary study of membership responsibilities indicates that although there is considerable distribution and wide range of background, there are some real problems in terms of the purposes of the Council. The following facts concerning our present membership explains a part of the problem.

Membership Responsibilities or Position

LOCAL		STATE OR AREA	
Administrative	41	State Department of Education	93
School Buildings and Grounds	35	Federal	10
Business Management	9	University	62
Other	24	Other	25
Total	109	Total	190

States or Provinces Without A Council Member

U.S.A.	Canada
Alaska	New Brunswick
Montana	Nova Scotia
Wyoming	Manitoba
Vermont	Alberta
New Hampshire	
Idaho	

A more careful analysis of the representation indicates that there are 16 states without a state-level representative, and 29 states without a university representative. Further consideration of individual responsibilities would indicate that even in those states with state-level representation the overall responsibilities are such that little of members' time can really be available for school planning. In conclusion, it is quite clear that many areas of the U.S.A. and Canada are without services of leadership from members of the Council.

If the purposes of the Council are to be considered as the basis for membership, it would seem that some solution other than changing the membership qualifications must be considered—having members without consideration for qualifications would not accomplish the objective of giving expert assistance in planning school facilities.

On the basis of these preliminary observations it would seem that the following suggestions might warrant further consideration.

1. In order to include in our membership all those meeting our membership qualifications, contact the state Departments of Education and universities not having members in the Council, to bring to their attention the Council purposes and the services we have available.

2. To bring officials of local districts and universities with building problems in contact with the Council services and experts in school planning. The Council should consider taking the initiative by providing special programs, workshops, clinics, and specialized services in cooperation with major universities, and/or regional organizations. The present functioning regional meetings might be the planning level, and the universities of the regions the program centers. The problems to be considered in each region should be determined on the basis of need. Local administrators would be invited to participate in the workshops or they could acquire services of specialists on a need-request basis.

3. This whole problem of membership and service needs a thorough study—possibly a doctoral study by some institution.

It would appear that this subject should be continued with further study by the Council.

DONALD O. BUSH

INVITATION TO PRINCETON FOR 1963

Cleve Westby extended a cordial invitation to the Council members to meet at Princeton from October 6-9, 1963.

He explained that the Princeton Inn as a facility would be completely taken over by the Council with no other groups using it concurrently. It was described as a charming institution, well-known throughout the East for its hominess and hospitality.

Although travel arrangements are more difficult here than to larger cities, Westby assured the members that complete instructions would be distributed during the year to aid their arrival.

Many opportunities for sightseeing are available in the area, and both Philadelphia and New York are within visiting distance. Arrangements can be made for a group visit to New York to include a Broadway play or any other activity desired.

The new Department of Education building for New Jersey will be completed by that time, and plans are being made to hold at least one session there. Other state buildings include a new state library, museum, auditorium, and the "most modern planetarium in America."

Both Princeton and Rutgers are nearby for examples of higher education facilities, and many new elementary, junior high, and senior high schools have been constructed in the surrounding area.

Special emphasis will be placed on the ladies' program, with the most difficult job being the selection of activities from the wide variety of choices. Mrs. Tonigan has been appointed chairman, and will be assisted by Mrs. Buros, Mrs. Miers, and Mrs. Holcombe.

The Council Members were urged to make plans early for the 1963 session, which Cleve Westby certainly made very appealing.

APPENDICES

A. BY-LAWS

B. TRAVEL & SUBSISTENCE RULES

C. MEMBERS

D. ANNUAL MEETINGS

APPENDIX A: BYLAWS

I. Name of Organization

The name of this organization is National Council on Schoolhouse Construction.

II. Purpose of Organization

To engage in those activities designed to stimulate improved procedures and conditions for the planning of better school plants including: the exchange of ideas and practices; the professional growth of members; the stimulation of needed research and the assembly, evaluation, and dissemination of existing research studies; the encouragement and improvement of professional training programs in schools of education and in schools of architecture; the encouragement of school plant divisions in state departments of education; the promotion of long-range planning; the functional planning of specific school plant projects; and the promotion of economy of construction.

III. Membership

1. Persons meeting one of the following classifications are eligible for membership in the Council:

(a) Federal, state, and local school officials and employees whose duties are primarily concerned with school plant programs and planning school facilities.

(b) College and university staff members who teach school plant courses, direct school plant planning and research, direct or conduct school plant surveys, or render school plant consultant services.

(c) Editors of educational and architectural periodicals regularly devoting considerable space to school plant problems.

(d) All present members of the Council and all who may hereafter be admitted to membership may retain membership subject to compliance with subsection 2.

2. Membership shall terminate upon failure to pay dues for two consecutive years. Restoration to membership shall be conditioned upon the payment of dues for the preceding and then current years.

3. Upon recommendation of the Executive Committee and a majority vote of the members present and voting at any annual meeting, any person who has for ten years been a member in good standing, has reached the age of 60 years, and has retired from the work that qualified him or her for membership in the Council may become a life member entitled to all the rights and privileges of the Council irrespective of subsection 2.

4. All applications for membership shall be filed with the Secretary to be referred to the Executive Committee, which shall investigate the applicant's qualifications for membership. Upon recommendation of the Executive Committee an applicant may be elected to membership by a majority vote of members present, and voting, at any annual meeting.

IV. Officers

The officers of this organization shall be a President, a Vice-President, and a Secretary-Treasurer, each of whom shall perform the usual duties of his office. These officers shall be elected by the Council at its annual meetings.

V. Committees

1. There shall be an *Executive Committee* of seven members. Three members shall be elected to serve for overlapping terms of three years. The retiring president and the newly-elected officers shall be members, with the President serving as chairman and the Secretary-Treasurer serving as secretary of the Executive Committee. The Executive Committee shall perform such duties as may be assigned by the Council, and carry on the business of the Council during the interim between meetings.

2. There shall be a *Committee on School Plant Research and Publications* to identify and sponsor research, to evaluate and disseminate research findings, to cooperate with other national organizations interested in school facilities, and direct the preparation of manuscripts in the school plant area and submit the same to the Executive Committee for discussion and publication. This Committee shall broadly represent Council membership and consist of five members appointed by the President to serve for overlapping terms of five years. Subcommittees from the membership of the Council may be constituted by this Committee when necessary to carry out its purpose.

3. There shall be a *Committee on Professional Training* composed of five members appointed by the President to serve for overlapping terms of five years. This Committee shall be charged with the responsibility of encouraging and improving professional training programs in schools of architecture and in schools of education, especially in the field of plant responsibility of school administrators, specialists in school plant planning, and those giving school plant consultant services. Personnel of this Committee shall broadly represent Council membership.

4. There shall be a *Committee on State Services*, composed of five members appointed by the President to serve for overlapping terms of five years, to further the Council objective of encouragement and improvement of school plant services in state departments of education. The personnel of the Committee shall broadly represent Council membership.

5. The chairman of each standing committee of the Council, together with the President, shall constitute the *Program Committee* of the Council. The President shall serve as chairman.

6. There shall be such *ad hoc* committees and liaison representatives as the Council may direct, or the President may determine and appoint.

7. Upon recommendation of the chairman of any standing committee and the approval by the Executive Committee of the Council, actual and necessary expenses of the Committees and/or subcommittees shall be paid from Council funds.

VI. Fiscal Year and Dues

The fiscal year shall be from October 1 through September 30. Annual membership dues shall be $10.00. Initial membership in the Council shall be consummated upon payment of the membership fee of $10.00, said fee covering the dues for the fiscal year of the election to membership.

VII. Time and Place of Meeting

The time and place of the annual meeting shall be determined by the Executive Committee for a period not to exceed two years.

VIII. Changes

Changes in these *Bylaws* may be made at any annual meeting of the Council by a two-thirds majority of the members present, and voting.

APPENDIX B: TRAVEL AND SUBSISTENCE REGULATIONS

In the interests of the Council it is evident that the elected officers and designated committees must carry out activities at periods other than during the dates of the annual meeting. To expedite such activities with a semblance of balance relative to the assets of the Council and to assist the secretary-treasurer in the proper accounting for such funds, the following regulations were developed. They were approved by the Executive Committee and made effective on October 1, 1961.

I. Authorization

A. Travel and subsistence must be authorized by the Executive Committee. Officers and committees are urged to determine travel and

subsistence needs for the period between annual meetings and to present such requests to the Executive Committee at the scheduled sessions of this committee. Special and emergency requests may be made during the period between annual meetings for the proper canvassing of the Executive Committee.

II. Travel Voucher

A. All expense items authorized by the Executive Committee must be reported in duplicate on the regular travel voucher form supplied by the secretary-treasurer's office. The carbon copy will be returned with payment of the claim.

III. Receipts

A. Receipts must accompany all expense vouchers for:
   1. Travel by plane, train, or bus.
   2. Hotel or motel accommodations.

IV. Travel

A. Reimbursements may be made for first class transportation including travel by:
   1. Plane, train, or bus.
   2. Pullman (lower berth if available).
   3. Taxi to, from, or between depots and airports (limousine service should be used when feasible and substantially cheaper).

B. Reimbursements for private car will be authorized at 8 cents per mile. Bridge and turnpike tolls will be reimbursed; however, parking costs will be limited to $1.50 per day. Travel by auto is not recommended except in cases where plane or train is not feasible.

C. See Sections II and III.

V. Lodging

A. Authorized lodging expenses will be limited to a maximum of $9 per day. Tips of not more than 50 cents for each hotel occupancy will be reimbursed.

B. See Sections II and III.

VI. Meals

A. Meals obtained on travel away from home may be reimbursed as follows:

   1. Daily maximum—$7. For less than a full day, the maximums are: breakfast—$1.15, lunch—$2.25, and dinner—$3.25, but the total for the day cannot exceed the $7 maximum.

VII. General

A. All reimbursement for travel and subsistence must be made by check by the secretary-treasurer of the Council.

B. It is recommended that all authorized claims for travel and subsistence be reported to the secretary-treasurer within thirty days following travel.

C. All members are urged to travel tax-exempt if their positions permit such exemption.

D. The Council cannot assume liability coverage for travel of its members. All members are urged to provide liability coverage personally.

APPENDIX C: MEMBERS OF THE NCSC

•Indicates registration at 1962 annual meeting.
Date indicates year the member joined the Council.

Adinolfi, Anthony G., Apartment 8, Dellwood Terrace, 543 Delaware Avenue, Delmar, New York. (1958)

•Alexander, L. T., Supervisor of Construction, Davidson County Department of Education, 2601 Bransford Avenue, Nashville 4, Tennessee. (1959)

Alford, Cecil H., Assistant Superintendent, 15125 Farmington Road, Livonia, Michigan. (1958)

Allison, E. F., Assistant Director of School Buildings, State Department of Education, Jefferson City, Missouri. (1955)

•Anderson, J. A., Chief Coordinator, School Plant Service, Texas Education Agency, Austin 11, Texas. (1961)

•Armstrong, Charles E., Jr., Administrative Director, Division of Business Services, School District No. 1, 414 14th Street, Denver 2, Colorado. (1954)

Austin, Frank D., Business Manager-Secretary, 910 West 8th Street, Amarillo, Texas. (1956)

•Bailey, G. G., Engineer, Georgia State Department of Education, 160 Central Avenue, Atlanta, Georgia. (1961)

Baker, L. J., Business Manager, Portland Public Schools, 620 Northeast Halsey Street, Portland 8, Oregon. (1958)

•Baker, Morris R., Construction Engineer, Board of Education of Baltimore County, 212 Aigburth Road, Towson 4, Maryland. (1958)

Barnes, James R., Assistant Superintendent, Pinellas County Board of Public Instruction, 1960 East Druid Road, Clearwater, Florida. (1961)

Barron, William E., Director, Office of School Surveys and Studies, 325 Sutton Hall, The University of Texas, Austin 12, Texas. (1961)

•Beck, A. L., Director of School Plant Facilities, State Board of Education, Olympia, Washington. (1952)

Beckley, Herman F., Director of Buildings and Grounds, Muncie Community School, 328 East Washington Street, Muncie, Indiana. (1961)

Beckman, Joseph M., Assistant Superintendent, Cincinnati Public Schools, 2355 Iowa Street, Cincinnati, Ohio. (1947)

Black, William B., Chief School Plant Specialist, Massachusetts School Building Assistance Commission, 88 Broad Street, Boston 10, Massachusetts. (1951)

•Blackburn, C. S., Professor of Educational Administration, P. O. Box 6265 North Texas Station, Denton, Texas. (1957)

Boerrigter, Glenn C., Research Assistant, School Housing Section, U. S. Office of Education, Washington 25, D. C. (1961)

•Boice, John R., Associate Director, School Planning Laboratory, School of Education, Stanford University, Stanford, California. (1962)

•Boles, Harold W., Associate Professor of Education, Western Michigan University, Kalamazoo, Michigan. (1961)

•Braun, E. J., Assistant Superintendent, Arlington Schools, 3074 North Pollard Street, Arlington, Virginia. (1942)

Briner, Conrad, Assistant Professor, Department of Education, Claremont Graduate School, Claremont, California. (1959)

Briscoe, William S., Professor of Education, University of California at Los Angeles, 243 23rd Street, Santa Monica, California. (1954)

Broadfoot, Albert R., 5557 Arlington Road, Jacksonville 11, Florida. (1953)

•Brown, Hyder Joe, Livingstone-Brown, 2158 Avenida De La Playa, La Jolla, California. (1953)

Buffaloe, Henry L., Engineering Consultant, 1115 Lake Wheeler Road, Raleigh, North Carolina. (1955)

•Bumbarger, Chester, Director of Schoolhouse Planning, State Department of Education, Salem, Oregon. (1931)

Buros, Francis C., Assistant Superintendent of Schools, White Plains Public Schools, 5 Homeside Lane, White Plains, New York. (1954)

•Bush, Donald O., Professor, Central Michigan University, Mount Pleasant, Michigan. (1951)

Bush, George H., School Building Specialist, Purdue University, Lafayette, Indiana. (1940)

Calvert, Aubrey W., Field Representative, State Department of Education, Room 810 State Building, 217 West First Street, Los Angeles 12, California. (1954)

•Cameron, John L., Chief, School Housing Section, U. S. Office of Education, Washington 25, D. C. (1950)

•Campbell, James T., Administrator, Capital Outlay and Debt Service, State Department of Education, Tallahassee, Florida. (1948)

Carney, N. L., Field Representative, U. S. Office of Education, Route 8, Clarksville, Tennessee. (1951)

Castaldi, Basil, Office of Field Services, University of Illinois, 309A Gregory Hall, Urbana, Illinois. (1952)

Caudill, W. W., c/o Caudill, Rowlett & Scott, 3636 Richmond Avenue, Houston 27, Texas. (1948)

Chambers, T. C., Jr., School Buildings Maintenance Consultant, Administration and Finance, 160 Central Avenue, State Department of Education, Atlanta 3, Georgia. (1961)

•Chapman, Arthur E., Director of School Buildings, State Department of Education, Richmond, Virginia. (1932)

•Chase, William W., Specialist, Department of Health, Education & Welfare, Office of Education, FOB, Room 2-2069, Washington 25, D. C. (1954)

Chiara, Herbert, Consultant, Pupil Transportation and School Plant Planning, State Department of Education, Carson City, Nevada. (1959)

Chick, Charles E., Head, School Plant Survey Section, State Department of Education, Tallahassee, Florida. (1961)

Childress, Jack R., Dean, School of Education, Boston University, Boston, Massachusetts. (1953)

•Clapp, W. F., Assistant Superintendent, State Department of Public Instruction, Lansing, Michigan. (1943)

Clark, William F., 1086 Mount Hope Street, North Attleboro, Massachusetts. (1951)

•Cochrane, Robert M., Director, Division of School Plant Service, State Department of Education, Capitol Building, Denver 2, Colorado. (1956)

Coffey, M. Gene, Assistant Supervisor of Plant Facilities, Department of Public Instruction, State Office Building, Des Moines, Iowa. (1960)

•Collins, George J., Director, National Inventory of School Facilities and Personnel, Department of Health, Education & Welfare, Office of Education, Washington 25, D. C. (1960)

•Conrad, Marion J., Head, School Plant Division, Bureau of Educational Research, Ohio State University, Columbus 10, Ohio. (1952)

Cooper, Dan H., School of Education, University of Michigan, Ann Arbor, Michigan. (1947)

Cooper, Shirley, Associate Secretary, American Association of School Administrators, 1201 16th Street, N. W., Washington 6, D. C. (1959)

Crockett, Keith L., Warren Road, West Rockport, Maine. (1959)

•Culver, Harold W., Director of School Planning and Construction, San Diego Unified School District, 4100 Normal Street, San Diego 3, California. (1961)

Dale, J. V., Jr., Assistant Supervisor of School Buildings, State Office Building, State Department of Education, Richmond, Virginia. (1961)

•Darby, Francis, Assistant Superintendent, Business Services, 209 Civic Center, San Diego 1, California. (1948)

Daum, Henry, Secretary and Business Manager, Abington Public Schools, Abington, Pennsylvania. (1957)

Davey, C. Leland, Supervisor, Buildings and Grounds, Granite School District, 3406 3545 South Street, Salt Lake City, Utah. (1958)

•Davis, Alfred L., Chief of School Plant Service, State Department of Education, Atlanta 3, Georgia. (1958)

Davis, Donald L., Educational Consultant, School of Education, Stanford, California. (1961)

Davis, Melvin M., Director of Plant Services, DeKalb County, Board of Education, Decatur, Georgia. (1961)

Deering, Elmer C., School Facilities Survey Representative, U. S. Office of Education, Washington 25, D. C. (1951)

•DeRemer, Richard W., Associate Professor, University of Pittsburgh, 2820 Cathedral of Learning, Pittsburgh 13, Pennsylvania. (1962)

•Dixon, M. Ted, Associate Superintendent, La Mesa-Spring Valley School District, 4750 Date Avenue, La Mesa, California. (1955)

Dixon, W. Irving, c/o Dixon and Norman, Architects, 1103 East Main Street, Richmond 19, Virginia. (1945)

Doherty, Leo T., Superintendent, Public Schools of Worcester, City Hall, Worcester, Massachusetts. (1949)

Domas, Simeon J., Administrator, Massachusetts School Building Assistance Commission, 88 Broad Street, Boston, Massachusetts. (1952)

Domian, O. E., Director, Bureau of Field Studies and Surveys, College of Education, University of Minnesota, Minneapolis, Minnesota. (1951)

Donovan, Bernard E., Assistant Superintendent, 110 Livingston Street, Brooklyn, New York. (1960)

Dotter, A. D., Acting Director, Division of School Buildings, State Department of Education, Albany 1, New York. (1950)

•Duvall, Elven E., Assistant Superintendent, Grosse Pointe Public Schools, Grosse Pointe, Michigan. (1959)

•Ellis, C. Lyman, Jr., Consultant Architect, Texas Education Agency, Austin 11, Texas. (1961)

Englehart, George D., Director of School Building Service, State Department of Education, Jefferson City, Missouri. (1947)

Erchul, J. Thomas, Architect, Suite 1010, San Diego Trust and Savings Building, 530 Broadway, San Diego 1, California. (1951)

Essex, Don L., Director, Division of School Buildings, State Department of Education, Albany, New York. (1936)

Etherington, Fred, Chief Architect, Board of Education, 24 Astor Avenue, Toronto, Ontario. (1951)

Evans, Ben H., Associate Professor & Coordinator of Architectural Research, Architectural Research, A & M College, College Station, Texas. (1962)

Fake, Charles E., Mountainview, Newtonville, New York. (1952)

Fales, Lloyd E., Consultant, 1719 Harding Avenue, Lansing, Michigan. (1956)

Featherstone, Richard L., Assistant Dean, 518 College of Education, Michigan State University, East Lansing, Michigan. (1956)

•Ferris, Harvey H., Field Representative, Bureau of School Planning, State Department of Education, Sacramento, California. (1955)

Finchum, R. N., 111 East Marshall Street, Falls Church, Virginia. (1955)

•Flesher, William R., Director, School Survey Service, 1286 West Lane Avenue, Columbus 21, Ohio. (1945)

•Fletcher, Glenn, Administrative Assistant to the Superintendent, 1300 Capitol Avenue, Houston, Texas. (1956)

Foster, John T., Supervising Architect, 504 Courthouse, Jacksonville, Florida. (1960)

•Foutz, Bill D., 900 North Klein, Oklahoma City, Oklahoma. (1951)

•Fowler, Fred M., School Plant Services, State Department of Public Instruction, Salt Lake City, Utah. (1951)

•Freeman, Ray C., Supervisor of Construction, Shoreline Public Schools, E. 158th and 20th Avenue, N. E., Seattle 33, Washington. (1959)

Frittenburg, Gordon D., Deputy Chief Architect, Toronto Board of Education, 155 College Street, Toronto, Ontario. (1961)

Frostic, Ralph F., Educational Consultant, Department of Public Instruction, Room 19 Capitol Building, Lansing, Michigan. (1962)

•Funkhouser, Scott A., Building Consultant, 302 State Office Building, Springfield, Illinois. (1959)

Gardner, Dwayne E., Educational Consultant, Division of School Planning, Department of Public Instruction, Raleigh, North Carolina. (1957)

Garland, James E., c/o Maurice H. Connell & Associates, Inc., Consulting Engineers, 315 N. W. 27th Avenue, Miami, Florida. (1948)

•George, N. L., Assistant Superintendent in Charge of Business Management, Oklahoma City Public Schools, Oklahoma City, Oklahoma. (1942)

Gibbins, Neil L., Consultant, Ohio State University, 1945 North High Street, 196 Arps Hall, Columbus, Ohio. (1960)

•Gibson, Charles D., Chief, Bureau of School Planning, State Department of Education, Sacramento, California. (1945)

Gilbert, Ernest R., School Architect, Richmond School Board, 2907 North Boulevard, Richmond 30, Virginia. (1962)

Gilliland, John W., Director of School Planning Laboratory, University of Tennessee, Knoxville, Tennessee. (1961)

Gilrain, Paul A., Director of School Plant, Room 414, Chamber of Commerce Building, 32 Franklin Street, Worcester 8, Massachusetts. (1958)

Gilson, Frank C., Architect, c/o Carl W. & R. T. Clark, 625 James Street, Syracuse 3, New York. (1945)

Goby, Lee W., Assistant Superintendent of Schools, Department of Buildings and Grounds, Springfield Public School District #186, 1900 West Monroe Street, Springfield, Illinois. (1962)

Gores, Harold B., President, Educational Facilities Laboratories, Inc., 477 Madison Avenue, New York 22, New York. (1962)

•Grimes, A. B., Department of Public Instruction, 6113 College, Des Moines, Iowa. (1951)

Grimm, Russell I., Consultant on School Planning, School Building Service, P. O. Box 2019, State of New Jersey Department of Education, Trenton 25, New Jersey. (1962)

Guice, Edward H., Consultant in School Architecture, Texas Education Agency, Land Office Building, Austin 11, Texas. (1959)

•Guild, Robert L., Educational Consultant, Protestant School Board of Greater Montreal, 6000 Fielding Avenue, Montreal, Quebec, Canada. (1956)

•Gunderloy, Frank C., Director of School Facilities, Anne Arundel County Board of Education, 204 Pasadena Road, Pasadena, Maryland. (1961)

•Gwynn, Thomas S., Jr., Board of Education, Prince George's County, Clinton, Maryland. (1952)

Hake, Barthold R., Director, Division of Buildings and Grounds, Louisville Public Schools, 506 West Hill Street, Louisville 8, Kentucky. (1962)

Handy, John W., Jr., Architect, 2268 Main Street, Stratford, Connecticut. (1950)

Hanover, Charles A., Warren Consolidated Schools, Warren, Michigan

Hanson, Alvin H., Superintendent of Schools, 9722 Watertown Plank Road, Milwaukee 13, Wisconsin. (1956)

•Hawley, Clifford, Administrative Assistant to the Superintendent of Schools, 351 West Wilson, Madison 3, Wisconsin. (1955)

Herrick, John H., Executive Director, Office of Campus Planning, 190 North Oval Drive, Room 309, Ohio State University, Columbus 10, Ohio. (1945)

•Hick, Basil L., Assistant in Educational Plant Planning, State Department of Education, Division of Buildings and Grounds, Albany 1, New York. (1952)

Higgins, E. Eugene, 414 Dale Drive, Lord Fairfax Estates, Fairfax, Virginia. (1955)

Higgins, Thomas J., Director, Bureau of Building Surveys, Board of Education, 228 North LaSalle Street, Chicago, Illinois. (1929)

Hill, Frederick W., Deputy Superintendent, New York City Public Schools, New York, New York. (1954)

Hodgen, John E., Specialist in School District Organization, School Building Assistant, 88 Broad Street, Boston 10, Massachusetts. (1959)

Holcombe, Howard W., Assistant Architectural Supervisor, 162 West State Street, Trenton 8, New Jersey. (1955)

Holmes, George W., III, School of Education, University of Virginia, Charlottesville, Virginia. (1955)

•Holstead, Richard L., Director, Building Program Studies, Board of Education, 428 South Broadway, Wichita, Kansas. (1959)

Horton, C. G., Consultant, School Plant Construction, State Department of Education, Montgomery, Alabama. (1961)

•Howard, Edwin E., Director of School Building Planning, Chattanooga Public Schools, 1161 West 40th Street, Chattanooga 9, Tennessee. (1962)

Howland, Richard L., Architect, State Department of Education, P. O. Box 2219, Hartford, Connecticut. (1949)

Hudson, Earl, Building Consultant Superintendent of Public Instruction, 302 State Office Building, Springfield, Illinois. (1961)

Hufziger, Otto C., Assistant Superintendent, Pontiac Public Schools, 40 Patterson, Pontiac, Michigan. (1957)

•Hughes, Harold G., Associate Superintendent, Grossmont Union High School District, Grossmont, California. (1958)

•Hull, R. J., Administrative Assistant, Madison Public Schools, 351 West Wilson Street, Madison 3, Wisconsin. (1950)

Humphrey, Joe R., 2518 Wooldridge Drive, Austin, Texas. (1951)

•Hunt, Lester W., Dean of Administration, State Teachers College, Kearney, Nebraska. (1958)

•Hutcheson, David W., Director of School Plant Services, Department of Education, Capitol Building, Lincoln 9, Nebraska. (1962)

•Irwin, Frank E., Director of School Plant, Cordell Hull Building, Nashville 3, Tennessee. (1958)

•Jacobs, Hugh L., Assistant Superintendent, 500 South Dayton Street, Kennewick, Washington. (1956)

Jay, DeWayne D., Director of Buildings and Grounds, Davis School District, Farmington, Utah. (1961)

•Jensen, Walter A., Superintendent of Buildings and Grounds, 440 East First South, Salt Lake City, Utah. (1958)

Johnson, Floyd R., Consultant, State Department of Education, Montgomery, Alabama. (1957)

Johnson, Hugh B., c/o Hugh Johnson, Associates, Inc., Architects, 2000 P Street, N. W., Suite 400, Washington 6, D. C. (1940)

Johnson, Marvin R. A., Design Consultant, Division of School Planning, Department of Public Instruction, Raleigh, North Carolina. (1955)

Jones, Howard R., Dean of Education, State University of Iowa, Iowa City, Iowa. (1953)

Jones, Robert C., Assistant Director, Division of School Building and Transportation, State Department of Education, Jackson, Mississippi. (1946)

Judkins, Lawrence D., 276 South Colonial Homes Circle, N. W., Atlanta 9, Georgia. (1953)

Kampschroeder, W. C., Director, School Administrative Services, State Department of Public Instruction, Topeka, Kansas. (1951)

Kastner, A. H., Director, School Housing Research, Milwaukee Board of School Directors, 5225 Vliet Street, Milwaukee, Wisconsin. (1951)

Keith, Paul J., 4311 Vivion Road, Kansas City 16, Missouri. (1951)

Knezevich, Stephen J., Professor of Education, Head, Department of Administration, Supervision and Curriculum, Florida State University, Tallahassee, Florida. (1955)

Landes, Jack L., Assistant Director, Office of University Plant Studies, Room 309, Administration Building, Ohio State University, Columbus 10, Ohio. (1955)

Landry, Herbert A., Board of Education, 110 Livingston Street, Brooklyn 1, New York. (1949)

Lane, Willard R., Professor of Education, University of Iowa, West 301 East Hall, Iowa City, Iowa. (1962)

Langley, L. D., Field Representative, Office of Education, Room 453, 50 Seventh Street, N. E., Atlanta 23, Georgia.

•Langston, LaMoine, Administrative Assistant, State Department of Education, Box 999, Santa Fe, New Mexico. (1960)

Lansing, John, Building Program Coordinator, Detroit Public School Center, 5057 Woodward, Detroit, Michigan (1962)

•Lawler, Eugene S., Professor of Education, Florida State University, Tallahassee, Florida. (1946)

Lawyer, Tolbert F., Supervisor of School Facilities, Board of Education of Frederick County, 115 East Church Street, Frederick, Maryland. (1961)

Lehman, Elwood H., Field Representative, State Department of Education, 721 Capitol Avenue, Room 342, Sacramento 14, California. (1959)

•Lemon, Richard L., Architect and Director, Schoolhouse Planning, 275 N. W. Second Street, Miami, Florida. (1960)

•Leu, Donald J., Professor of Education, 416 College of Education, Michigan State University, East Lansing, Michigan. (1953)

•L'Hote, John, Supervising Engineer, Detroit Board of Education, Detroit Public School Center, 5057 Woodward, Detroit, Michigan. (1961)

Little, Thomas C., Assistant Superintendent, Richmond City Schools, 312 North Ninth Street, Richmond, Virginia. (1960)

Lucht, George, Associate Professor, 205 Franklin Hall, Kent State University, Kent, Ohio. (1955)

Marshall, John E., Educational Consultant, 51 Washington Street, Belmont 78, Massachusetts. (1945)

•Martin, Harold F., Superintendent, Upper Marion Township, 655 South Gulph Road, King of Prussia, Pennsylvania. (1956)

Martin, Robert E., Director of Schoolhouse Planning, State of Indiana, 401 North State House, Indianapolis 4, Indiana. (1962)

Martin, W. Edgar, Specialist for School Equipment, School Housing Section, U. S. Office of Education, Washington 25, D. C. (1951)

Mason, George W., Engineer, Division of Buildings and Grounds, State Department of Education, Frankfort, Kentucky. (1957)

•McCann, R. Harold, Assistant Superintendent, Board of Education, Anne Arundel County, Arnold, Maryland. (1961)

•McClurkin, W. D., Director, Division of Surveys and Field Services, George Peabody College for Teachers, Nashville, Tennessee. (1946)

•MacConnell, James D., Associate Professor of Education, Stanford University, Stanford, California. (1948)

McCormick, Felix, Division of Field Studies, Teachers College, Columbia University, New York, New York. (1948)

•McCrary, Nile O., Supervisor, Federal Projects and Consultative Services, 111-B Cordell Hull Building, Nashville 3, Tennessee. (1959)

McCullough, James D., Assistant Superintendent for Business, Chattanooga Public Schools, 413 East Eighth Street, Chattanooga 3, Tennessee. (1961)

McDonald, C. F., School Plant Supervisor, Room 211, Parliament Building, Regina, Saskatchewan, Canada. (1956)

•MacDonald, J. T., Board of Education for the Township of York, 15 Oakburn Crescent, Willowdale, Ontario. (1957)

McGinnis, John F., Director, Educational Housing Branch, Los Angeles Board of Education, 256 Conway Avenue, Los Angeles 24, California. (1961)

•McGuffey, C. W., Administrator, School Plant Section State Department of Education, Tallahassee, Florida. (1950)

McLaughlin, Daniel R., Assistant Dean, University of Nevada Southern Regional Division, Nevada Southern, Las Vegas, Nevada. (1962)

McLean, B. M., Technical Adviser, Department of Education, Room N120, Parliament Buildings, Queen's Park, Toronto 2B, Ontario. (1960)

•McLeary, Ralph D., Superintendent of Schools, 132 West Washington Avenue. Jackson, Michigan. (1947)

•McNicholas, John J., Jr., Associate Director, Educational Facilities Study, Minneapolis Public Schools, Special School District #1, Administration Building, 807 Northeast Broadway, Minneapolis 13, Minnesota. (1959)

Megginson, George M., School Planning Department, Broward County Public Schools, Fort Lauderdale, Florida. (1956)

Merwin, Bruce W., 433 South Elm Road, Lakeland, Florida. (1947)

Meverden, Merville L., Director of Physical Plant, Central Missouri State College, Warrensburg, Missouri. (1962)

Miers, Harold W., Assistant, State Teachers Colleges Construction Program, State Department of Education, 175 West State Street, Trenton, New Jersey. (1956)

•Miller, Graham, Denver Public Schools, 1985 Grape Street, Denver 20, Colorado. (1962)

•Miller, Howard L., Consultant, School Facilities Services, State Department of Public Instruction, Statehouse, Topeka, Kansas. (1959)

Miller, Leon, Superintendent, Pomona Unified School District, 605 North Park Avenue, Pomona, California. (1955)

Minor, Bluford F., Assistant Superintendent and Business Manager, San Diego City Schools, Education Center, Park Boulevard at El Cajon, San Diego 3, California. (1949)

Mitchell Donald P., Executive Secretary, New England School Development Council, 475 Broadway, Cambridge 38, Massachusetts. (1952)

•Moll, Emmett J., Assistant Supervisor, School Housing Research, Milwaukee Public Schools, 5225 West Vliet Street, Milwaukee 8, Wisconsin. (1956)

•Moore, Harold E., Superintendent, School District No. 6, 6558 South Acoma Street, Arapahoe County, Littleton, Colorado. (1945)

Moore, John W., Director, Illinois School Building Commission, 2112 West Jefferson Street, Joliet, Illinois. (1961)

•Morrill, A. Reed, c/o Chairman, Graduate Education Department, College of Education, 205 McKay Building, Brigham Young University, Provo, Utah. (1959)

Morrison, J. L., 502 Candler Building, Atlanta, Georgia. (1947)

•Morton, William R., Director of School Construction, Bellevue School District, Bellevue, Washington. (1961)

•Mueller, William F., Assistant Superintendent in Charge of Buildings and Grounds, School City of South Bend, 228 South St. Joseph Street, South Bend 1, Indiana. (1959)

Mullins, Frank, Superintendent of Buildings, Etobicoke Board of Education, 540 Burnhamthrope, Etobicoke, Ontario. (1960)

•Myers, George A., Supervisor, Maryland State Department of Education, 301 West Preston Street, Baltimore 1, Maryland. (1962)

Nakata, Henry S., Director of School Building Services, Department of Public Instruction, P. O. Box 2360, Honolulu, Hawaii. (1952)

•Naylor, T. H., Jr., Executive Secretary, State Educational Finance Commission, State Office Building, Jackson, Mississippi. (1947)

•Neagley, Ross L., Professor of Education, Box 365, Temple University, Philadelphia, Pennsylvania. (1956)

Nesper, Paul W., Associate Professor, Department of Education, Ball State Teachers College, Muncie, Indiana. (1962)

Newlin, Herschel H., Administrative Supervisor of School Facilities, Baltimore City Department of Education, 3 East 25th Street, Baltimore 18, Maryland. (1961)

•Nordrum, G. B., Director, State School Construction Fund, Department of Public Instruction, Bismarck, North Dakota. (1956)

•North, Stewart D., Assistant Professor, 205A Education Building, University of Wisconsin, Madison, Wisconsin. (1961)

Okamura, James T., Assistant District Superintendent, Department of Public Instruction, P. O. Box 2360, Honolulu, Hawaii. (1958)

•O'Neill, Stanley P., Director, School Plant Planning, Dearborn Public Schools, 5757 Neckel, Dearborn, Michigan. (1952)

•Oswalt, F. E., Assistant Superintendent in Charge of Plant Management, 4760 Linda Lane, Memphis, Tennessee. (1956)

Owings, Ralph S., Dean, School of Education and Psychology, Box 24, Station A, Hattiesburg, Mississippi. (1955)

•Parker, Floyd G., Associate Professor, 409 College of Education, Michigan State University, East Lansing, Michigan. (1949)

Patterson, Dow, Field Representative, Bureau of School Planning, State Department of Education, 217 West First Street, Room 810 State Building, Los Angeles 15, California. (1948)

Petersen, Fred J., Assistant Professor of Education, University of South Dakota, Vermillion, South Dakota. (1955)

Phay, John E., Director, Bureau of Educational Research, School of Education, University of Mississippi, University, Mississippi. (1955)

Pickel, T. Wesley, Coordinator, Division of School Plant, Pupil Transportation and Special Services, State Department of Education, Nashville, Tennessee. (1947)

•Pierce, J. L., Director, Division of School Planning, Department of Public Instruction, Raleigh, North Carolina. (1959)

Polton, Russell C., Assistant Superintendent, Cherry Creek Schools, 4955 South Dayton, Englewood, Colorado. (1961)

•Prentice, W. M., Superintendent of Plant, Scarborough Board of Education, 2472 Eglinton Avenue East, Scarborough, Ontario, Canada. (1958)

Purdy, Ralph D., Director, Bureau of Educational Field Services, Miami University, Oxford, Ohio. (1957)

•Randolph, Victor, Professor of Elementary Education, Southern Illinois University, Carbondale, Illinois. (1949)

•Reid, James L., Supervisor of School Plant Planning, State Department of Education, State Office Building, Baltimore 1, Maryland. (1949)

•Reida, G. W., Director, School Facilities Services, State Department of Education, Topeka, Kansas. (1957)

Resnick, Jerome J., Supervisor, Building & Construction, Anaheim Union High School District, 123 North Citron, Anaheim, California. (1962)

Rice, Arthur H., Sr., Editor, THE NATION'S SCHOOLS, Suite 1050, Merchandise Mart, Chicago 54, Illinois. (1949)

Riecks, John M., Assistant Superintendent of Buildings and Grounds, Franklin Administration Building, 13th & K Streets, Public Schools, Washington 5, D.C. (1962)

•Rissetto, Henry J., Assistant, Institute of Field Studies, Teachers College, Columbia University, New York 27, New York. (1954)

Roberts, Charles T., Program Specialist, Office of Education, Department of NEW, Washington 25, D. C. (1957)

Russell, J. C., 4709 Granny White Road, Nashville, Tennessee. (1929)

Santos, Carroll A., Jr., Hobcaw Drive, Route #1, Mt. Pleasant, South Carolina. (1955)

•Schadt, Marvin R., Head, Department of School Administration, Kansas State Teachers College, Emporia, Kansas. (1962)

Schoales, Robert D., Chief Architect, Board of Education, London, Ontario, Canada. (1954)

•Schooler, James C., Consultant on School Reorganization and Buildings, Department of Education, Pierre, South Dakota. (1951)

Schotland, Joseph, Four Bridges Road, Chester, New Jersey. (1957)

Schroder, L. D., Assistant Superintendent, 440 East First South Street, Salt Lake City, Utah. (1960)

Schroeter, Frank P., US AID American Embassy, Khartoum, Sudan. (1954)
•Seagers, Paul W., School of Education, Indiana University, Bloomington, Indiana. (1947)
•Self, Harvey R., Deputy Business Administrator, Board of Education for the City of Toronto, 155 College Street, Toronto 2-B, Ontario, Canada. (1957)
•Shaw, Archibald B., Editor, OVERVIEW, 470 Fourth Avenue, New York 16, New York. (1959)
Sheffer, L. Miles, Hudson-Sheffer & Associates, 422 Ponce de Leon Avenue, N. E., Atlanta, Georgia. (1951)
•Silverthorn, Harold, School Planning Consultant, Northshore Schools, Administration Office, 9816 N. E. 183rd Street, Bothell, Washington. (1948)
Simmons, Wray L., Assistant Regional Director, CFA, HHFA, 989 Market Street, San Francisco, California. (1960)
Simpson, Robert J., Assistant Professor and Consultant, 203 McGuffey Hall, Miami University, Oxford, Ohio. (1961)
Smalling, G. A., 5511 Stillbrook, Houston 35, Texas. (1947)
Smith, Allen C., Assistant Superintendent, State Department of Education, 160 Central Avenue, Atlanta, Georgia. (1953)
•Smith, A. P., Director, School Building and Transportation, Box 771, State Department of Education, Jackson, Mississippi. (1960)
Smith, Clifford B., 1412 North 35th Street, Apt. 13, Phoenix, Arizona. (1960)
Smith, Donovan, Office of Vice-President of Finance, 491 East University Hall, University of California, Berkeley 4, California. (1956)
•Smith, G. Dewey, Assistant Superintendent, Board of Education Building, 1211 McGee Street, Kansas City 6, Missouri. (1953)
Smith, Gordon F., School Planning Technician, 7890 Alida Street, La Mesa, California. (1960)
•Smith, Wallace R., Assistant, Oklahoma City Public School System, 900 North Klein, Oklahoma City, Oklahoma. (1962)
•Southerlin, W. B., Supervisor, Schoolhouse Planning, State Education Finance Commission, Columbia, South Carolina. (1948)
Spare, Edward A., Consultant on School Plant Planning, 15 Laclede Avenue, Trenton, New Jersey. (1956)
Speck, Alfred E., 3018 Mayfield Way, Michigan City, Indiana. (1957)
•Stoneman, Merle A., Professor of School Administration, University of Nebraska, Lincoln 8, Nebraska. (1949)
•Stormer, William L., Specialist, School Plant Planning, Room W-125 Capitol Building, Charleston 5, West Virginia. (1959)
•Strevell, Wallace H., Professor of Education, College of Education, University of Houston, Houston 4, Texas. (1954)
Strolle, Roland S., Head, Education Department, Western Michigan University, Kalamazoo, Michigan. (1949)
Stumpf, Wippert A., Associate Professor of Education, Box 6162, College Station, Durham, North Carolina. (1952)
Summerville, Delbert G., c/o Engelhardt, Engelhardt, Cornell, 211 West 57th Street, New York 19, New York. (1956)
Sutherland, D. B., Director of Construction and Maintenance, Vancouver School Board, 1595 West Tenth Avenue, Vancouver 9, British Columbia, Canada. (1954)
Swafford, George E., Assistant Professor of Education, Department of Education, Psychology & Special Education, Ball State Teachers College, Muncie, Indiana. (1962)
Swisher, W. M., Supervisor, Construction and Maintenance, 415 East Grant Street, Phoenix, Arizona. (1960)

•Taylor, Alex R., Architect, Scarborough Board of Education, 2472 Eglinton Avenue East, Scarborough, Ontario. (1958)
•Taylor, J. L., Specialist on Planning School Buildings, U. S. Office of Education, Washington 25, D. C. (1940)
•Thomas, Paul W., Director, Research & School Plant Planning, Kanawha County Schools, 200 Elizabeth Street, Charleston, West Virginia. (1962)
Thrasher, James M., Consultant, Pasco School District No. 1, 1004 North Mead, Pasco, Washington. (1958)
•Thurman, Paul W., Director, State Department of Education, Frankfort, Kentucky. (1945)
•Tjomsland, Arnold C., Associate Professor and Coordinator of Field Services, Washington State University, Pullman, Washington. (1951)
•Tollerud, Guy O., Director of School Building Planning and Development, State Department of Education, 334 State Office Building, St. Paul 1, Minnesota. (1954)
•Tonigan, R. F., Plant Manager, Teachers College, Columbia University, 525 West 120th Street, New York, New York. (1954)
Tresslar, James S., Assistant Supervising Principal, Plymouth Whitemarsh School System, Germantown Pike, Plymouth Meeting, Pennsylvania. (1957)
Trotter, Leslie E., Architect, State Department of Education, State Office Building, Atlanta, Georgia. (1961)
Updike, Charles N., State Department of Education, 175 West State Street, Trenton 25, New Jersey. (1959)
Underwood, Frank C., Jr., Business Manager, Board of Public Education, 208 Bull Street, Savannah, Georgia. (1961)
•Utterback, T. V., Chief, School Building Section, State Department of Education, Room 603, State Office Building, Columbus 15, Ohio. (1959)
•Vestnys, Wilbert, Assistant Superintendent, 135 Van Ness Avenue, San Francisco, California. (1962)
•Volla, Virgil, Assistant Superintendent, Los Angeles City Board of Education, 1425 South San Pedro Street, Los Angeles 54, California. (1954)
Waggoner, Larry D., Administrative Assistant, School Housing Division, Detroit Board of Education, Detroit Public School Center, 5057 Woodward, Detroit, Michigan. (1961)
•Waite, Lloyd, Director of School Plant, Caddo Parish School Board. 501 Court House, Shreveport, Louisiana. (1952)
Walsh, Leonard C., Director, Educational Planning Service, Colorado State College, Greeley, Colorado. (1958)
Weber, Walter H., Assistant Supervisor, School Housing Research, Milwaukee Board of School Directors, 5225 West Vliet Street, Milwaukee 8, Wisconsin. (1957)
•Wegner, Fred A., Architect, Chief of Construction Division, Board of School Directors, 5225 West Vliet Street, Milwaukee 8, Wisconsin. (1953)
•Welch, Lester J., Director, School Facilities, Board of Education—Montgomery County, Rockville, Maryland. (1962)
Welling, Robert E., Assistant Superintendent, Goleta Union School District, 5689 Hollister Avenue, Goleta, California. (1958)
•Wells, Charles, Jr., School Plant Planning Consultant, Wayne County Board of Education, 310 City-County Building, Detroit 26, Michigan. (1957)
•Westby, Cleve O., Director, School Building Services, State Department of Education, 175 West State Street, Trenton 8, New Jersey. (1947)
•Whitehead, Willis A., Educational and Research Consultant, School Building Planning, 3692 Traynham Road, Shaker Heights 20, Ohio. (1945)
•Whitnall, William H., Inspector of Construction, Scarborough Board of Education, 16 Crescentwood Road, Scarborough, Ontario, Canada. (1961)

Wicker, June W., Associate Architect, Georgia State Department of Education, Office of School Plant Services, 160 Central Avenue, S. W., Atlanta 3, Georgia. (1961)
Wilbur, A. Mills, Assistant Superintendent, Saginaw Township Community Schools, 5685 Shattuck Road, Saginaw, Michigan. (1953)
Wilcox, Edward F., Assistant Commissioner of Education, Division of Instructional Services, Roger Williams Building, Hayes Street, Providence 8, Rhode Island. (1956)
Williams, Delos D., Route 3, Box 815A, Salem, Oregon. (1954)
Williams, Seymour, Consultant on Schoolhousing, Rahway, New Jersey. (1941)
Wilson, Allan B., Chief Architect, 1595 West Tenth Avenue, Vancouver, British Columbia, Canada. (1958)
*Wilson, Russell, Consultant, University of Michigan, Ann Arbor, Michigan. (1949)
*Wilson, W. O., University of New Mexico, College of Education, Albuquerque, New Mexico. (1952)
Wimbish, W. Ross, Director of School Building Planning, 1715 26th Street, Lubbock, Texas. (1956)
*Wohlers, Arthur E., Bureau of Educational Research and Services, 191 Arps Hall, Ohio State University, Columbus 10, Ohio. (1954)
Womack, Darwin W., Director, School Plant Services, Atlanta Public Schools, 224 Central Avenue, S. W., Atlanta 3, Georgia. (1962)
Wooldridge, James D., 102 Southwick Street, Fairfax, Virginia. (1948)
*Wrightson, Norman, Staff Engineer, Protestant School Board of Greater Montreal, Department of Buildings, Montreal, Quebec, Canada. (1956)
*Wusthoff, Charles F., Jr., Director, Office of Construction Supervision, New Orleans Public Schools, 703 Carondelet Street, New Orleans 12, Louisiana. (1956)
Young, Richmond C., Assistant, Educational Plant Planning, State Department of Education, Albany, New York. (1955)

HONORARY AND LIFE MEMBERS

Bishop, Leon W., P. O. Box 132, Chilhowie, Virginia. (1929)
Bruce, William C., Editor, THE AMERICAN SCHOOL BOARD JOURNAL, 400 N. Broadway, Milwaukee, Wisconsin. (1922)
Bursch, Charles, 2522 E Street, Sacramento, California. (1934)
Carpenter, W. W., Professor of Education, University of Missouri, Columbia, Missouri. (1930)
Cocking, Walter D., Editorial Consultant, American School Publishing Corporation, 470 Fourth Avenue, New York 16, New York. (1930)
DeShaw, Elton R., Architect, 225 J Avenue, Coronado 18, California. (1939)
Durham, W. W., School Building Consultant, 2220 East Harrison Street, Tacoma 4, Washington. (1943)
Eicher, Hubert C., 207 North 30th Street, Harrisburg, Pennsylvania. (1922)
Gay, Howard S., 411 Beechwood Place, Westfield, New Jersey. (1938)
Hamon, Ray L., Consultant, School Facilities, Cedar Grove, Maine. (1930)
Holy, T. C., 231 University Hall, University of California, Berkeley, California. (1945)
Horn, J. Fred, 112 Edward Street, Tallahassee, Florida. (1927)
Irons, Gerald E., 5363 Barton Road, North Ridgeville, Ohio. (1935)
Jelinek, B. J., 2277 North Lake Drive, Milwaukee 2, Wisconsin. (1933)
Lehr, William E., 3 East 25th Street, Baltimore 18, Maryland. (1947)
Lewis, John W., Assistant Superintendent of City Schools, Department of Education, Baltimore, Maryland. (1933)

Linn, H. H., Professor of Education, Teachers College, Columbia University, New York, New York. (1945)
Mahar, James J., 129 Gallivan Boulevard, Dorchester 24, Massachusetts. (1930)
Murphy, Forrest, Dean, School of Education, University of Mississippi, University, Mississippi. (1946)
Rivers, Paul L., 509 Stewart Road, Modesto, California. (1948)
Scherer, Francis R., 60 Cathaway Park, Rochester 10, New York. (1925)
Smith, Henry L., 705 East 7th Street, Bloomington, Indiana. (1929)
•Theisen, W. W., 2750 North Hartung, Milwaukee, Wisconsin. (1933)
Troxel, O. L., Professor of Education, Colorado State College, Greeley, Colorado. (1948)
Turnbull, J. L., Assistant Superintendent of Public Instruction, Oregon State Department of Education, Salem, Oregon. (1947)
Viles, N. E., 2423 Virginia Avenue, Joplin, Missouri. (1931)
Wiley, Guy E., 1009 Elmwood Avenue, Oshkosh, Wisconsin. (1931)
Wilson, W. K., Consultant, Educational Plant Planning, 910 Washington Avenue, Rensselaer, New York. (1934)
Young, Gordie, State Department of Education, Frankfort, Kentucky. (1945)

APPENDIX D: ANNUAL MEETINGS

No.	*Year*	*Place*	*President*
1	1922	Buffalo	S. A. Challman
2	1923	Cleveland	S. A. Challman
3	1925	Harrisburg	S. A. Challman
4	1926	St. Paul	S. A. Challman
5	1927	Nashville	H. C. Eicher
6	1928	Raleigh	F. H. Wood
7	1929	Rochester-Albany	S. L. Smith
8	1930	Little Rock	J. J. Blair
9	1931	Richmond	F. R. Scherer
10	1932	Hartford	R. V. Long
11	1933	Milwaukee	H. W. Schmidt
12	1934	Washington	J. F. Horn
13	1935	Washington	R. H. F. Halsey
14	1936	Austin	W. G. Eckles
15	1937	Columbus	T. C. Holy
16	1938	Frankfort	W. F. Credle
17	1939	New York	A. B. Moehlman
18	1940	Chicago	J. W. Brooker
19	1941	Virginia Beach	J. W. Lewis
20	1942	Cleveland	N. E. Viles
21	1943	Cincinnati	T. J. Higgins
	1944	War (no meeting)	S. P. Clemons
22	1945	Cincinnati	W. K. Wilson
23	1946	Jackson	H. C. Headden
24	1947	Columbus	W. F. Clapp
25	1948	San Francisco	C. Bursch
26	1949	Indianapolis	J. L. Graham
27	1950	Miami Beach	I. O. Friswold
28	1951	Minneapolis	A. M. Proctor
29	1952	Boston	R. L. Hamon
30	1953	East Lansing	Don L. Essex
31	1954	San Diego	C. D. Gibson
32	1955	New Orleans	W. R. Flesher
33	1956	Washington	W. W. Theisen
34	1957	Milwaukee	E. J. Braun
35	1958	Seattle	H. Silverthorn
36	1959	Kansas City, Missouri	G. D. Englehart
37	1960	Toronto	L. L. Waite
38	1961	Atlanta, Georgia	A. C. Tjomsland
39	1962	Denver, Colorado	J. L. Taylor