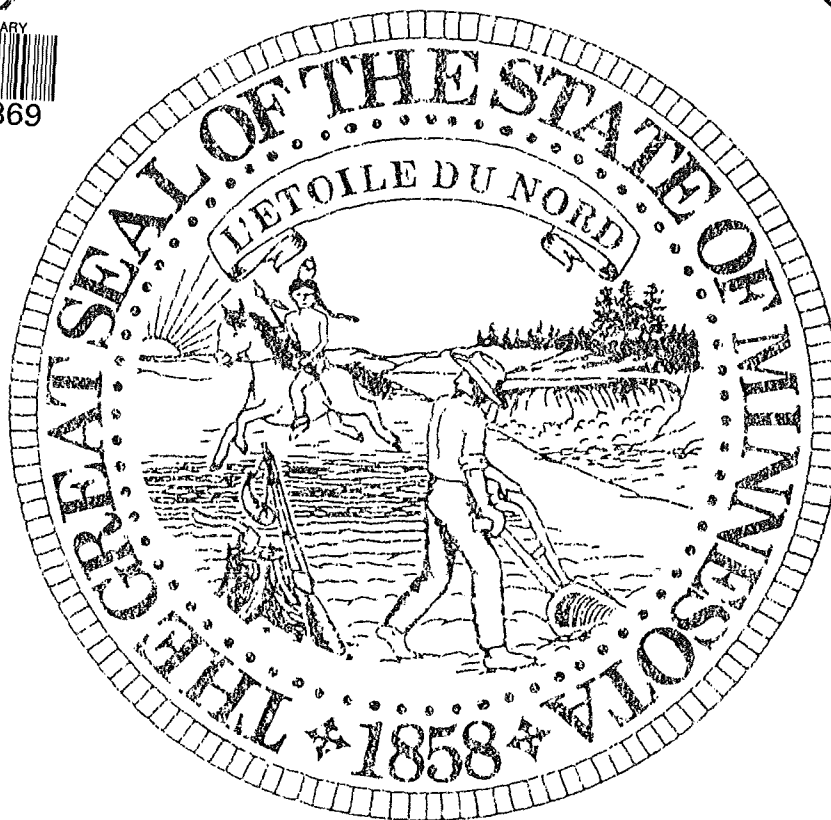


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GOVERNOR'S CONSTRUCTION CODES ADVISORY COUNCIL

CALENDAR YEAR
1998

PROGRESS REPORT

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1998

— Minn. Stat. 16B.76 Subd. 2

— 1998 Minn. Laws Chap. 366
Art. 28

22





February 10, 1999

Acting Commissioner Scott Simmons
Department of Administration
50 Sherburne Avenue
St. Paul, MN 55155

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Dear Acting Commissioner Simmons:

Pursuant to Executive Order 96-7, the enclosed "Calendar Year 1998 Progress Report" is submitted by the Governor's Construction Codes Advisory Council.

Sincerely,

Thomas R. Joachim
Chair, Governor's Construction Codes
Advisory Council

Gary K. Thaden
Vice Chair, Governor's Construction Codes
Advisory Council

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enclosure

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GOVERNOR'S CONSTRUCTION CODES ADVISORY COUNCIL

CALENDAR YEAR 1998 PROGRESS REPORT

To obtain these materials in Braille, audiotape, large print or other forms, call Peggi White
Voice 651.296.4626 or TDD 800.627.3529

For more information or copies of this report, contact the Building Codes and Standards Division at 651.296.4626



INTRODUCTION

Governor Arne Carlson created the Governor's Construction Codes Advisory Council in May 1996 by executive order. The council was created to bring the various public and private interested parties together to discuss, debate, and provide the governor, legislature, and building construction regulatory agencies with advice on construction statutes, rules, standards, and licenses. The governor asked the council to focus on and find ways to:

- eliminate inconsistencies and streamline construction regulation and licensing processes;
- review and comment on current and proposed regulations;
- advise agencies on changing rules and regulations to make them easier to understand and apply;
- assist in the coordination of rules and regulations; and
- consolidate construction code enforcement and administration within authorized jurisdictions.

The council is composed of representatives from:

- four of the state agencies that administer construction codes -- Administration's Building Codes and Standards Division, Health's Environmental Health Division, Public Safety's Fire Marshal Division, and Public Service's Energy Regulation and Resource Management Division;
- Minnesota Building Officials
- Minnesota State Fire Chiefs' Association
- American Institute of Architects;
- Consulting Engineers Council;
- Building Owners and Managers Association;
- Builders Association of Minnesota
- Associated Builders and Contractors
- Associated General Contractors;
- Minnesota Association of Plumbing, Heating, and Cooling Contractors;
- Minnesota Mechanical Contractors Association; and
- the League of Minnesota Cities

Additionally, the Minnesota House and Senate could each have two ex officio, nonvoting members on the council. The council is required to report its progress at the end of each calendar year.

Following were the members, as well as alternates, for the 1998 calendar year:

1998 GOVERNOR'S CONSTRUCTION CODES ADVISORY COUNCIL

DEPARTMENT OF ADMINISTRATION

BUILDING CODES AND STANDARDS DIVISION

Thomas R. Joachim, State Building Official,
Chairman of Council

Janet Streff, Alternate and Recordkeeper
St. Paul, MN 55101

**MINNESOTA DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH**

Patricia Bloomgren, Director
Gary Topp, Alternate

**DEPARTMENT OF PUBLIC SAFETY
STATE FIRE MARSHAL DIVISION**

Thomas R. Brace, State Fire Marshal
Jon Nisja, Alternate

**DEPARTMENT OF PUBLIC SERVICE
ENERGY DIVISION**

David Sampsel
Narv Somdahl, Alternate

MINNESOTA BUILDING OFFICIALS (MNBO)

Mike Kulczyk
Bill Barber, Alternate

MINNESOTA STATE FIRE CHIEFS ASSOC.

Stephen Landry
No Alternate

AMERICAN INSTITUTE OF ARCHITECTS

Dean Newins
No Alternate

CONSULTING ENGINEERS COUNCIL

Tom Downs
Dave Oxley, Alternate

BUILDING OWNERS AND MANAGERS ASSOC.

Kent Warden
No Alternate

BUILDERS ASSOCIATION OF MINNESOTA

Len Pratt
Lisa Peterson, Alternate

ASSOCIATED BUILDERS & CONTRACTORS

Ted Ferrara
Elizabeth Coover, Alternate

ASSOCIATED GENERAL CONTRACTORS

No member was active in 1998

**MINNESOTA ASSOCIATION OF PLUMBING,
HEATING, AND COOLING CONTRACTORS**

Duane Javens
Don Sullivan, Alternate

**MINNESOTA MECHANICAL CONTRACTORS
ASSOCIATION**

Gary Thaden (Vice Chairman of Council)
No Alternate

LEAGUE OF MINNESOTA CITIES

Edward Mlynar
Remi Stone, Alternate

MINNESOTA STATE SENATE

Senator Dan Stevens
Senator Deanna Wiener

MINNESOTA HOUSE OF REPRESENTATIVES

Representative Lynda Boudreau

ACCOMPLISHMENTS

1. The Governor's Construction Codes Advisory Council proposed legislation to establish in statute an advisory council to continue the efforts of the Governor's Construction Codes Advisory Council. The Governor's Construction Codes Advisory Council will sunset after issuance of this report. This legislation, which was proposed by Senator Wiener and Representative Boudreau, passed during the 1998 session and the new council will be activated January 1999.

The new council will continue the work begun by the Governor's Construction Codes Advisory Council. That work includes continuation of the current technical advisory groups (TAGs), which include Code Coordination and Procedures, Fees, Statewide Code Adoption and Healthier Homes, and establishing new TAGs to investigate other areas of concern initially raised by the Governor's Construction Codes Advisory Council such as providing certification for building inspectors and establishing code adoption cycles.

2. The council built a framework for establishing technical advisory groups that will enable future councils to investigate a variety of construction-related issues. The council first established points of reference to keep them mindful of the charges given to the Council when establishing a TAG to assist them in the resolution of those charges:

1. Resolve inconsistencies among the various codes
2. Resolve, in a reasonably short time, inconsistencies in the code process and ensure a mechanism to resolve future code inconsistencies.
3. Initiate changes in codes and administrative processes.
4. Establish cooperative agreements between regulatory parties.
5. Set up standards for, coordinate, and have final approval for code development, adoption, administration of the codes, and streamlining of code(s) procedures.
6. Review and make recommendations on streamlining the entire permitting and construction regulatory process.
7. Create subcommittees or technical advisory groups to carry out research and gather input from interested parties.

(Accomplishments, section 2 continued)

They next created steps to form a TAG:

1. Create charge for the TAG
2. Create name or acronym for TAG
3. Suggest timeline and scope of TAG
4. Create list of potential members send notification letters
5. Elect TAG members based upon responses from potential members
6. Provide council suggestions for Chair
7. Nominate council member for membership in TAG

Finally, the Council created a framework for setting up the TAG:

Technical Advisory Groups Within The Construction Codes Advisory Council

PURPOSE

The purpose of a Technical Advisory Group (TAG) is to answer the charge of the Council:

- To research issues
- To provide information
- To make recommendations to the Council

MEMBERSHIP

- The membership of the TAG shall be composed of at least one voting member of the Council and any interested persons appointed by the Council.
- The Chair of the TAG shall be appointed by the Council, and may be a member of the Council or any other member of the TAG.
- Membership of the TAGs should be representative of interest groups affected by the specific issue, and shall include members with technical expertise or field experience in the specific issue.
- TAGs shall consist of members appointed from a list of persons and organizations expressing an interest in membership. The Council will make reasonable effort to notify interested parties of the formation of TAGs.
- TAG members will be appointed by the Council to serve for a specific task or period.
- The Council may appoint other persons as necessary to accomplish the charge of the TAG.

TAG OPERATION

- Meeting locations and dates will be determined after TAGs are formed. At their organizational meeting, each TAG will adopt a meeting schedule, including a timeframe for completion within the Council's charge.
- Subcommittees of a TAG may be appointed by the TAG chair from among its members to address specific issues to be brought back to the TAG for action.
- Members who know that they will be absent from a TAG meeting should make every effort to send a substitute.

(Accomplishments, section 2 continued)

- TAGs shall make every attempt to come to a consensus of all members before making recommendations to the Council. If consensus cannot be reached, options will be proposed and position papers prepared by its members.
- Consensus recommendations shall include a brief summary of the rationale for the recommendation.
- Open meetings are covered by Council bylaws.

Using this framework, the Council set up four technical advisory groups in 1998: the Healthier Homes TAG, Code Coordination and Procedures TAG, Statewide Code Adoption TAG, and the Fee TAG.

3. During the 1998 legislative session, the issue of indoor air quality in residential homes was raised by a number of policy makers,. The council took this issue, assigned a technical advisory group (TAG) to research and report back to the council avenues to help create and maintain a healthier home. While the report from the Healthier Homes TAG is substantial, the Council believes that it is only the first step in reviewing the issues relating to healthier homes in Minnesota. One of the recommendations to the new council was to continue investigation into the issues surrounding healthier homes.

Following is the Executive Summary of the report from the Healthier Homes:

HEALTHIER HOMES TAG EXECUTIVE SUMMARY

The Technical Advisory Group was given a charge to research current codes, rules and standards in an effort to determine how we can best provide a sound indoor environment in new residential construction in Minnesota. After several meetings it became clear to TAG members that this issue was very complex. In the search to define a "healthy home," the group determined that it was only reasonable to suggest what might constitute a "healthier home" and to focus the report on indoor air quality concerns. The group adopted this goal as an objective and continued researching documents and publications that could help in this pursuit.

As meetings proceeded, members brought forth information gathered from many sources. Organizations such as the Canadian Mortgage and Housing Corporation, the US Environmental Protection Agency, and the American Lung Association, as well as other profit and non-profit organizations, provided material which formed the basis of this report. The complex task began to take form. It became clear that this report should address several areas: the health impacts of pollutants found in materials used to construct our homes as well as finishes and furnishings

(Accomplishments, section 3 continued)

brought into the home; the importance of good design and construction practices; and occupant responsibility for a healthier home. The common thread through all of these areas of concern is education. If we are to go forward with improving the indoor environment, each and every individual involved in the planning, construction, and occupation of a healthier new home must have more and better information available to them.

BACKGROUND MATERIAL

Americans spend about 90% of our time indoors. Sixty-five percent of that time is spent inside our homes. In the last fifteen to twenty years, we have seen a dramatic increase in the reported cases of asthma and respiratory illness. There is clear and convincing evidence that household air impacts the health of the inhabitants of a house. Studies showing statistically significant results of health and indoor air are listed in Section V. Background Material of this report. Others are listed in Section X. References.

The evolution of housing construction has led to tighter construction and less air exchange in houses. There are good reasons for tighter construction. Conservation of energy became very important in the 1970's and is likely to continue to be important. Homeowners have demanded houses that are less drafty, more comfortable, and more energy efficient. In addition, the materials that have been developed as our natural resources are challenged have different moisture and air quality characteristics than the old products. These new methods are not likely to change, nor should they. We must simply recognize the changes and provide for safe products and equipment as well as construction practices that will protect occupants.

Pollutants in our indoor air. The effects of pollutants in our indoor air can be acute or chronic, and will vary depending on the age and overall health conditions of the occupants. The level of concentration and length of exposure also affects the response of the occupant.

Pollutants can enter the house from the exterior or can be generated inside the home. Exterior sources include air from the outdoors, attached garages, and gases from the soil. pollutants can be components of building materials such as plywood, floor underlayment, and cabinets. Furnishings brought into the house can also be polluted. Simple activities that are a part of everyday life can add pollutants. Moisture and byproducts from cooking, hobbies that include the use of adhesives and glues, the use of cleaning products, and the combustion process can all be responsible for polluting the indoor air.

Several pollutants are known to be especially troublesome in indoor air. Health risks identified with each are described in Section V. Background Material, of this report. The pollutants included are:

- Biologicals (mold, mildew, dust mites, etc.)
- Volatile organic compounds
- Combustion contaminants
- Pesticides
- Formaldehyde
- Ozone

While each of these has its own risks, this report addresses each by suggesting how they can be eliminated or controlled in indoor air. The most effective way to eliminate pollutants is

(Accomplishments, section 3 continued)

not to bring them in. Other methods of control include dilution by means of ventilation or by choosing materials with low pollutant levels. Choosing sealed combustion heating and water heating equipment would greatly lower the risk of exposure to combustion pollutants.

OCCUPANT ROLE IN PROVIDING A HEALTHIER HOME

The indoor air quality in a home is greatly affected by its occupants. Occupants can play an important part in making decisions in the design and construction phase of home construction. They also affect the indoor air with products they bring into the house as well as activities they perform inside the home. But the biggest impact from occupants in the long term is how the building is operated and maintained. Homeowners must accept the responsibility to properly and adequately care for, repair, and maintain their homes.

The features that make a house healthier are not necessarily required by code, nor are they standard practice at this time. Education is key to helping homebuyers and homeowners understand how they can influence the indoor air of a house. If they are provided with the information, they can better make the decisions necessary to protect themselves and their families from risk.

DESIGN AND CONSTRUCTION ISSUES RELATED TO A HEALTHIER HOME

The design and construction of a house is an amazingly complex process involving hundreds of decisions and the interaction of builders, consumers, subcontractors, material suppliers, and building officials, as well as installers and technicians.

Planning for a healthier home should begin with the design stage of the project. To assist in the planning process, TAG members suggest that a checklist of items identifying a healthier home be developed. Such a list could be a point of discussion for healthier home features as well as for cost comparisons. Research and discussion at TAG meetings have led to the following conclusions.

Specific design features that should be *discouraged* are:

- The use of underground/in-slab ductwork.
- The installation of flexible duct for any HVAC or exhaust fan application.

On the other hand, there are several design features that should be *encouraged* in the construction of a healthier home. They include:

- Encourage balanced heat recovery ventilation systems.
- Use of sealed combustion equipment and appliances.
- Better isolation between the house and the garage.
- Improve moisture control for basements and foundation walls.
- Require ducting to be sealed and of hard or solid material (not flexible).
- Better overall design of ventilation systems and filtration.

Building Materials and Installation Practices. Builders as well as homebuyers need education about building materials that can impact indoor air. As new products enter the market, some type of evaluation system must be available to assist in choosing healthier products in the homes they construct.

(Accomplishments, section 3 continued)

Construction Quality Control. Residential plans often lack the detail necessary to evaluate healthier construction. A check list of critical items that is agreed upon and understood by all parties involved in the construction process could improve the process and help assure healthier homes.

Coordination among all key players in the construction process (builder, subcontractor, suppliers, site supervisors, building code inspectors, and homebuyers, is critical. Education along with a checklist of compatible products and equipment would help assure that the construction of a healthier home is not compromised.

Education and Licensing. While residential contractors are currently licensed under Minnesota law, subcontractors and mechanical contractors are not. TAG members recommend that mechanical contractors as well as technicians and installers of mechanical equipment be either certified or licensed, and be required to attend continuing education on an annual basis.

There is also a special need for building code inspectors to be certified and trained. The heavy losses suffered by homeowners in recent natural disasters (flooding) have led to changes in insurance practices in this country. Building inspection departments across the country are being rated. In communities with good building departments, higher quality inspection services could result in reductions of insurance premiums for some property owners. This program may be a motivation to assure that building departments are fully funded with qualified staffing, and to encourage the adoption of the building code statewide.

Healthier Homes Index Manual. TAG members recommend that a quick reference manual on issues relating to a healthier home be developed. This manual would be used for builders, buyers, and policy makers. Cross references of all pertinent building codes should be included in this manual. The manual could also be used as an educational tool in training about healthier home construction.

EDUCATION - THE FINAL WORD

The need for education of the builders, consumers, subcontractors, building code officials, suppliers, and installers cannot be overemphasized. This education should not only cover design and construction issues, but must also address maintenance and operation issues. Government should play a major role in directing the research and in monitoring the projects that are necessary to determine public policies. It must also take the lead in providing educational opportunities. Production of healthier homes affects efficient use of natural resources, protection of the environment, productivity, and most importantly, the health and well-being of each member of our society.

Again, the Governor's Construction Codes Advisory Council recommends that the new council continue the research into the issue of healthier homes in Minnesota.

4. Based upon the framework they created to form TAGs, the Council formed three other TAGs in 1998. Those TAGs are the Code Coordination and Procedures TAG, the Statewide Code Adoption TAG, and the Fee TAG. The charges the Council gave to the TAGs follow:

(Accomplishments, section 4 continued)

CODE COORDINATION AND PROCEDURES TAG

The Construction Codes Council has given the Code Coordination and Procedures TAG the following charge:

- Examine the state code adoption process and make recommendations regarding:
- Coordination of state agencies' rule adoption processes including statutes, using the same Revisor's Office representative, timing of adoption, duplications, and identifying outdated systems
- Coordination of state agencies' education/communication of codes
- Effective ways to collect opinions and input
- Treatment of national model codes using the state Administrative Procedures Act process (the process by which all state rules are written and adopted)

This TAG has met twice and intends to present its report to the Council in August 1999.

STATEWIDE CODE ADOPTION TAG

The Construction Codes Council has given the Statewide Code Adoption TAG the following charge:

Examine the adoption of the state building code and make recommendations regarding:

- Extent of applicability of the State Building Code in Minnesota both by type of structure and geographically
- Advantages and disadvantages of statewide code adoption
- Timeline and process for achieving statewide adoption
- Enforcement of the code once it is adopted

FEE TAG

The Construction Codes Council has given the Statewide Code Adoption TAG the following charge:

The Fee TAG shall examine the use of building construction fees by local units of government and made recommendations regarding:

- Present state of construction fees and use in local units of government
- What fees are required by construction codes
- Amounts of the fees
- Allowance for dollar carryover from one year to the next due to swings in the economy
- Guidelines for uses of fees for inspection and plan review
- Timeline for implementation

RECOMMENDATIONS

The Governor's Construction Codes Advisory Council has been meeting regularly since early 1997 discussing issues regarding the construction statutes, rules, regulations and standards affecting the construction industry in Minnesota to streamline regulations and make them easier to understand and apply.

The Governor's Construction Codes Advisory Council makes the following recommendations to the incoming council:

1. Continue to research the issue of healthier homes in Minnesota.
2. Continue work with the Code Coordination and Procedures, and Statewide Code Adoption, and Fee TAGs.
3. Establish a TAG to investigate certification of inspectors.
4. Review these issues and any new issues with a long-term focus that provides reasonable workable solutions as opposed to short term fixes.