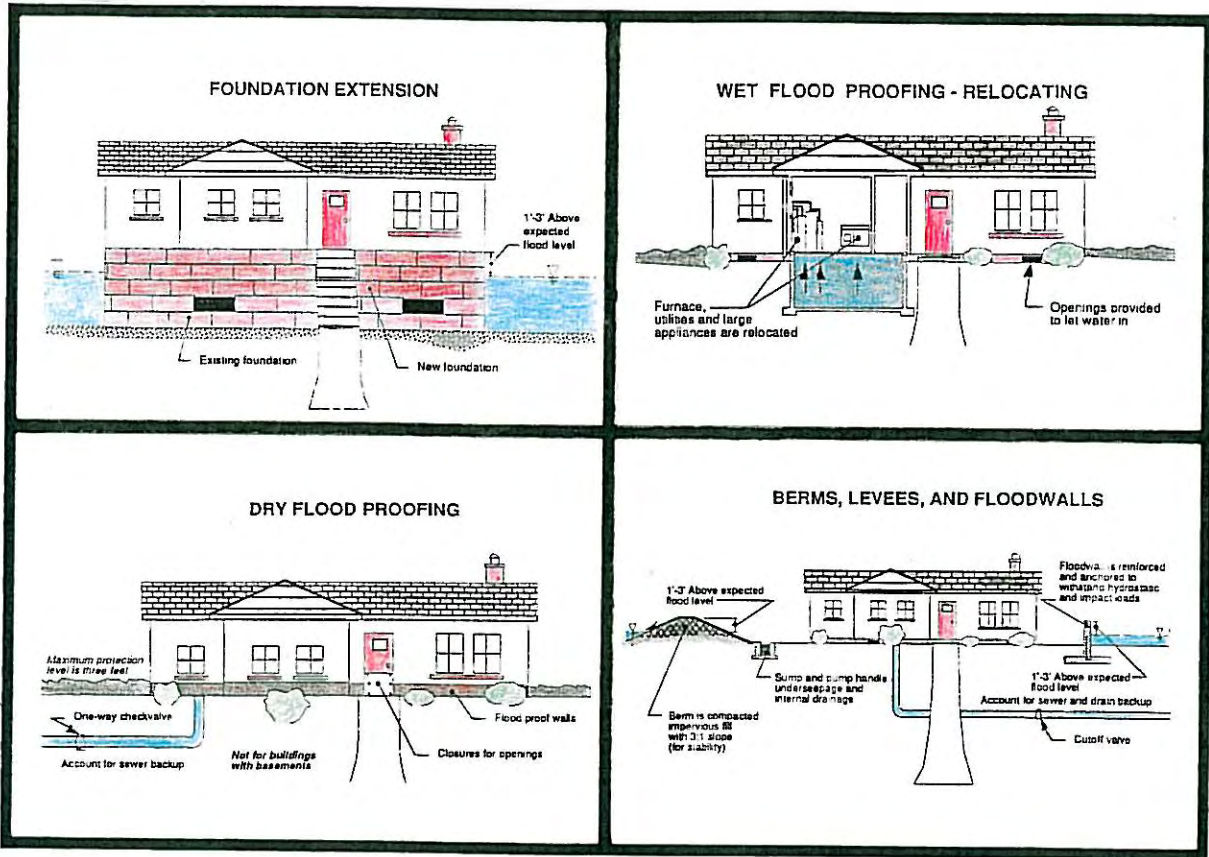




MAUMEE RIVER BASIN FLOOD CONTROL MASTER PLAN (IMPLEMENTATION PHASE)

FLOODPROOFING COST-SHARE ASSISTANCE PROGRAM



For

**MAUMEE RIVER BASIN COMMISSION
ROOM B80 CITY-COUNTY BUILDING
FORT WAYNE, INDIANA 46802**

JANUARY 1996

CBBEL PROJECT NO. 95-150



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MAUMEE RIVER BASIN FLOOD CONTROL MASTER PLAN

FLOODPROOFING COST-SHARE ASSISTANCE PROGRAM

prepared for

The Maumee River Basin Commission

by



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January 1996

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MAUMEE RIVER BASIN FLOOD CONTROL MASTER PLAN FLOODPROOFING COST-SHARE ASSISTANCE PROGRAM

Introduction

Floodproofing assistance to owners of eligible residential and non-residential structures within the floodplain is one of the major recommended components of the Maumee River Basin Flood Control Master Plan. Floodproofing is defined as any measure that a property owner might take to minimize flood damage to any structure within their property. These measures include structure elevation, relocation, barrier construction, dry floodproofing, and wet floodproofing. Further information on floodproofing methods and considerations are provided in the MRBC Floodproofing Guidelines (attached as Appendix 2).

Pursuant to the Master Plan recommendations, this document is prepared in order to establish the details of the MRBC Floodproofing Cost-Share Assistance Program, guidelines, and instructions on how to apply for such assistance. Obtaining of the building/site permits and the actual floodproofing work is to be performed/contracted out by the homeowners with the MRBC's technical and financial assistance. The MRBC funding will be distributed through local participating governmental unit, i.e., appropriate department or plan commission of the county, city, or town within the Basin having jurisdiction over the floodproofing site ("local jurisdiction"). Local jurisdiction would coordinate the work and will be responsible for the final approval of construction and recommendation for release of funds. Homeowners, through their respective counties, cities, and towns can apply for the MRBC funding assistance according to the procedures established in this document. To receive financial and technical assistance, the applicants must follow the MRBC Floodproofing Guidelines.

Eligibility

To be eligible for the cost-share program, the following criteria must be met. These criteria are established so that the available funds may be used in the most effective manner.

1. Property must lie within the 100-year floodplain but outside the regulatory floodway (According to criteria established in the Master Plan, properties located within the regulatory floodway are not eligible for floodproofing assistance and would only be considered for the MRBC voluntary buyout program);
2. Property must be located within an area designated by the MRBC Master Plan as being subject to floodproofing or buyout. Areas planned to be protected by levees/floodwalls are not eligible for floodproofing assistance;
3. Property must be located within the Maumee River Basin jurisdictional area in Indiana;

4. Property's Lowest Adjacent Grade (LAG) should not be more than three (3.0) feet lower than the 100-year flood elevation at the site (According to the Master Plan, if the flooding depth next to the structure is greater than 3.0 feet, the property is not eligible for floodproofing assistance and would only be considered for the MRBC voluntary buyout program);
5. Improvements will not exceed 50 percent (or other value applicable to local jurisdiction, if stricter) of structure's fair market value; and
6. County, town, and city within which the property is located must have already adopted both the Flood Hazard Areas and Storm Drainage Ordinances. These ordinances must meet the minimum MRBC model ordinance requirements.

Application Requirements

The application package must contain enough information to enable proper review by the local jurisdictions and the MRBC. The form will consist of three (3) parts. Part 1 is completed by the applicant and will include required information regarding the applicant, the location of the property, type of structure (foundation, number of floors, type of use), and information regarding any prior flooding damages to the property.

Part 2 of the form consists of needed information which are typically more difficult for the applicant to gather. This portion of the form is, therefore, planned to be completed by the local jurisdiction with assistance from the applicant and, if needed, from the MRBC. Information required in Part 2 include property's location with regard to the floodplain zone/designation, lowest floor elevation, elevation of the lowest adjacent grade (LAG), and a proposal/cost estimate from a design engineer/architect and/or a qualified contractor.

Part 3 of the application form consists of the local jurisdiction's signature and comments signifying its concurrence with the project as proposed. An application form specifying the minimum required information has been developed for this purpose and is enclosed as Appendix 1.

Application, Project Review, and Selection Process

The application, review, and selection process will be as follows:

1. Areas where the floodproofing assistance is planned to be offered will be prioritized by the MRBC and the local jurisdiction. Target areas will then be chosen for the current phase of implementation plan.
2. A team, consisting of the MRBC and the local jurisdiction, will publicize the program in the targeted areas and will distribute applications to the affected property owners.

3. The applicant will complete the Part 1 of the application form and sends it to the local jurisdiction.
4. The local jurisdiction will perform a preliminary screening of the application to confirm that the property is located in the targeted area and that it would appear to be eligible for the MRBC funding assistance.
5. The local jurisdiction, with assistance from the applicant and the MRBC staff (if needed), will collect/determine the needed information/data and completes Part 2 of the application form.
6. Upon proper completion of the application form, the local jurisdiction will be able to verify that the application submittal is complete, the work meets the established criteria, and that the proposed project is consistent with the local jurisdiction's floodplain development programs. If satisfied, the local jurisdiction will signify its support for the project by completing Part 3 of the application form and will then forward the completed form to the MRBC.
7. Upon receipt of application packages from different jurisdictions, the MRBC staff will make a final review and, with assistance from the local jurisdiction and the property owner, will investigate and apply for any potential matching grants from outside funding sources, if applicable.
8. The MRBC staff will then be able to determine the amount of funding assistance that the MRBC can provide. This determination will be based on the estimated cost of project, availability of outside funding, household income levels, and the applicable MRBC funding cap.
9. After the above review and determination process is completed, recommendations are made by staff based on the geographical location of the site, the severity of flooding, potential flood damages, adherence to established guidelines, requirement for permits, ability to qualify for outside matching funds, and availability of funds. The recommended projects will be presented to the full MRBC Board for selection and authorization.
10. Upon authorization by the MRBC, the property owner and the local jurisdiction will be notified of the amount of assistance that will be available from the MRBC as well as from any potential outside funding source.
11. Before a contract is awarded and the actual implementation of the floodproofing project is started, the property owner needs to sign an agreement. The agreement would state that the work will be undertaken by a licensed contractor with minimum insurance requirements and that the property owner will be responsible for paying all the project cost beyond any grants committed by the MRBC or other outside granting agencies. The agreement would also state that the property owner is responsible for future maintenance of the floodproofing works and that

the property owner indemnifies and holds harmless the MRBC and the local jurisdiction for any future claims such as those resulting from flooding or water damage caused by an event that exceeds the design level of protection.

12. A dully appointed representative of the MRBC and the local jurisdiction may inspect the project, with proper notice, during and after its completion to confirm the proper implementation of the project.

Funding

Funding shall be shared so that up to 75% of the money will be from the government (including MRBC, any matching grants obtained from outside sources, or grants obtained through the local jurisdiction) with the rest coming from the property owner. Provisions will also be made to reduce the property owner's match for those families falling within the Federal income limits of low to moderate income households. Low to moderate income households will be defined as those households making less than 80% of the median County income by family size. For those eligible households, the matching requirement would be reduced from 25% to 10% (increasing the government share from 75% to a maximum of 90%). The difference would be made up through securing State and Federal funds or by the local jurisdiction.

The MRBC and matching grants share is to be paid directly to the contractor upon satisfactory completion of the work and after the invoice is received by the MRBC or the local jurisdiction. The property owner will participate in the selection and award of the job to a qualified, licensed contractor, and is responsible for payment to the contractor above and beyond the amount contributed by the MRBC or the local jurisdiction. Before the project can be awarded, the property owner must sign an agreement affirming its responsibility towards payments to the designer/contractor, as stated in item number 11 (above).

The maximum amount of contribution from the MRBC funds per structure (excluding any matching grants from outside sources), would be as follows:

Single family residential structure	\$5,000
Manufactured/Mobile Home Unit	\$1,500
Multi-family apartment building	\$7,500
Non-residential structures	\$10,000

Questions

If you have any questions, please write to: Maumee River Basin Commission, Room B80, City-County Building, Fort Wayne, IN 46802 or call (219) 449-7226.

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APPENDIX 1
APPLICATION FORM

**MAUMEE RIVER BASIN FLOOD CONTROL MASTER PLAN
FLOODPROOFING COST-SHARE ASSISTANCE PROGRAM
APPLICATION FORM**

PART 1 (To Be Completed by the Property Owner)

Property Owner's Information

Name: _____
Telephone No. (daytime): _____ Telephone No. (home): _____

Property's Location

Property Address: _____ City: _____, State: __, Zip Code: _____
___ The property is located in the corporate limits of _____ (City/town) within _____ County, Indiana
___ The property is located within the unincorporated portion of _____ County, Indiana
(Please include a map showing the location of the property and the nearest street intersection)

Property Information

Structure Use (check one):

___ Single Family Residential ___ Multi-family Apartment Building
___ Manufactured/Mobile Home Unit ___ Non-residential
___ Other (specify): _____

Structure Type: ___ One Story ___ Two Story ___ Split Level ___ Manufactured House
Foundation Type: ___ Basement ___ Crawl Space ___ Slab
Has the site been previously flooded? ___ Yes ___ No (If yes, please include a narrative describing any prior damages due to flooding, including dates, costs, etc.)

Affirmation

I affirm that the above information are, to the best of my knowledge, accurate.

Applicant's Signature: _____, Date Signed: _____

PART 2 (To Be Completed by the Local Jurisdiction)

Floodplain-related Information

Source of Potential Flooding: _____ (River/Ditch/Creek)
Flood Zone (if known): ___ Floodway ___ Floodway Fringe
100-year Flood Elevation (if known): _____ feet. (Source: _____)
FEMA map panel number(if known)(attach copy with location marked): _____
Lowest Floor Elevation (feet, NGVD 29): _____
Lowest Adjacent Grade (feet, NGVD 29): _____

Description of Proposed Work

Estimated Floodproofing Cost: \$ _____
Basis for the Estimate: _____
Name of Engineer/Architect and Contractor: _____
Detailed Scope and Description of the Proposed Work (attach photographs from the site/structure, a narrative outlining the work to be done, and a copy of the contractor's proposal/cost estimate.)

Information in Part 2 completed by: _____, Date: _____

PART 3 (To Be Completed by the Local Jurisdiction)

Local Government (appropriate department, plan commission, etc.) Concurrence

Name: _____, Title: _____
_____ Department/Commission, County/City/Town of _____

Signature: _____
Comments: _____

Applicant: Please return the completed application and support documentation to:

APPENDIX 2
MRBC FLOODPROOFING GUIDELINES

MAUMEE RIVER BASIN FLOOD CONTROL MASTER PLAN FLOODPROOFING GUIDELINES

Introduction

Floodproofing assistance to owners of eligible residential and non-residential structures within the floodplain is one of the major recommended components of the Maumee River Basin Flood Control Master Plan. The intent of this document is to serve as a initial guide for conveying floodproofing concepts to property owners. It contains a listing of common floodproofing techniques, key considerations when floodproofing a structure, MRBC-specific design requirements, factors to consider in deciding whether to floodproof, and helpful hints on selecting architects/engineers or contractors. There is a vast amount of reference material available on the subject of floodproofing. A Bibliography of significant floodproofing-related publications is provided at the end of this document. Pertinent text and material from several of these sources have been utilized in the preparation of this document. These publications are available through the MRBC.

Floodproofing Methods

Floodproofing is any measure that a property owner might take to minimize flood damage to any structure within their property. There are several floodproofing options available, varying from simple to complex, and in general, the more complex the option, the more expensive it will be to implement. Floodproofing may be designed either to reduce the number of times the building is flooded or to limit the potential damage to the building and its contents when it is flooded. General approaches to floodproofing, ranging in cost from virtually nothing (when the homeowner moves valuables out of the area subject to flooding) to as high as \$20,000 (when some structure elevation and floodwall construction techniques are used), include:

1. Implementing measures that prevent basement flooding and sewer backups;
2. Wet floodproofing: Modifying the building and relocating the contents to allow floodwaters inside the structure with little or no damage;
3. Dry floodproofing: Preventing water from entering the structure by making the building floor and walls watertight;
4. Floodwalls: Preventing the floodwaters to come near the building by constructing barriers around the building or at the lower elevations on the property; and
5. Elevation: Preventing the floodwaters to enter the building by raising the building in place.

Key Considerations for Selecting an Appropriate Floodproofing Measure

To select the appropriate floodproofing measure for a structure, one must carefully consider the nature of the flood hazard, the physical conditions of the site, the function and use of the building, and its structural characteristics. The following list contains some of the many key considerations that must be addressed as one considers floodproofing:

Site Characteristics

- Relief/slope
- Proximity to water
- Stability of soil
- Presence of bedrock
- Construction equipment access
- Aesthetics
- Impact upon adjacent properties
- Coastal/riverine flooding source
- Utilities

Flood Characteristics

- Flood water velocity
- Flood water depth
- Rate of flood water rise
- Duration of flooding
- Debris content in flood waters
- Historic accounts of previous flooding

Building and Use Characteristics

- Slab, crawl space, or basement
- Structural stability
- Overall size
- Structural strength
- Access during flooding
- Utility locations
- Will people be sleeping in the flood prone area?
- Can area be converted to storage?
- Is area used primarily for storage?
- Type of construction (concrete, brick, wood, etc.)?
- Building condition (excellent, good, fair, poor)?
- Maintenance access

Detailed guidelines on determining the most appropriate measure for a particular building may be found in a recent COE's publication entitled: "Flood Proofing - How to Evaluate Your Options", prepared in July 1993 by the National Floodproofing Committee. This publication is available through the MRBC.

MRBC-Specific Design Considerations

In design of the proposed floodproofing measures to be partially funded by the MRBC Cost-Share Assistance Program, the following items should be considered:

1. Floodproofing projects should be designed by a qualified professional engineer/ architect and job performed by a qualified, licensed contractor with minimum insurance requirements. This is especially important if flood depths against the building are greater than 1-2 feet. The need for a professionally licensed engineer will be evaluated by the MRBC on a case by case basis.
2. Floodproofing must protect against a 100-year flood. Since it is impossible to eliminate all risks, the owner should be aware of the extent of any remaining flood risks. It is strongly recommended that the homeowners purchase flood insurance for additional protection of their property.
3. All floodproofed structures must be properly anchored.
4. All work must comply with local building codes.
5. All local Flood Hazard Areas and Storm Drainage/Erosion Control ordinances shall be followed and all necessary permits shall be obtained by the applicant.
6. Applicants shall have 60 calendar days to begin construction after award of matching funds are announced. If the construction does not begin within 60 days, the applicant needs to re-apply for funding.
7. During construction, a sign provided by the MRBC shall be posted at the site stating the following: "Floodproofing Cost-Share Assistance Program; State of Indiana and Maumee River Basin Commission; For more information, call (219) 449-7226."
8. A local government representative, the MRBC Executive Director, or a duly appointed representative shall have a right of entry for inspection of the project after a 24 hour notice is given.
9. All construction must be approved by the MRBC prior to disbursing any matching funds to the contractor.
10. Application for funds does not necessarily guarantee any cost-share contribution by the MRBC.

Factors to Consider in Deciding to Floodproof

There are a number of factors residential property owners should consider prior to making a decision to floodproof. Some factors will be more important than others depending on the financial situation and lifestyle of the homeowner along with severity of the flooding problem. Following is a brief description of some of the more pertinent factors which should be considered.

- **Floodproofing assistance** - This is perhaps the most important of all the factors to be considered. The MRBC Floodproofing Cost-Share Assistance Program has been established to cover up to 75% of the cost, up to a maximum amount established for each category of use. For a single-family residence, the limit of MRBC assistance is set at \$5,000.
- **Building codes** - Before property owners commit a significant investment of time and money in floodproofing, they should contact the local building inspector or city/county engineer for requirements and for information on obtaining necessary permits.
- **Cost estimates** - Before making a commitment to do any floodproofing work, the property owner should obtain an approximate cost estimate of the floodproofing measure to assist in deciding whether further consideration is worthwhile.
- **Benefits** - The most obvious benefit to consider is the potential reduction in flood damages. Several of the publications referenced in this document provide a simple procedure to estimate potential flood damages to a structure and its contents. As a "rule of thumb", for each foot of flooding depth, the damage to the structure and its contents is expected to be approximately 15% of the structure value, if no floodproofing measures were implemented. Other less obvious benefits may include avoiding the expense and inconvenience of staying in a motel, loss of time from work while cleaning and repairing the flooded structure, and the preservation or extension of the structure life by reducing repeated flooding incidents.
- **Inconvenience** - Associated with most flooding is a significant amount of personal inconvenience. In many cases, the house cannot be occupied until cleanup and repairs have been completed. The owner may also have to file insurance claims and disaster assistance applications. Damaged household and personal items such as clothes, furniture, and appliances will have to be cleaned or replaced. Utilities must be restored. Also, irreplaceable items, such as photographs or family heirlooms, may be destroyed by a flood.
- **Health and Safety** - When a home is flooded, occupants are exposed to a variety of health hazards. Sewer lines to the building may back up and flood the building. The water supply could become contaminated. Food, medicine, and cosmetics that have been touched by flood waters may be spoiled. Also, when attempting to reenter a building after a flood, occupants may be exposed to electrical shock from outlets or

appliances. Flood waters may cause cracks in gas lines in the building, resulting in gas leaks and possibly fires. In addition, the aftermath of coping with a flood can cause considerable stress. Property owners and their families may suffer loss of sleep or fatigue. Many of the hazards associated with entering and occupying a flood-damaged building can be avoided by floodproofing the building.

- **Architectural Aesthetics** - The homeowner may wonder, "How will my house look if I floodproof? Will it look strange?" This is an important consideration. With the help of an architect, floodproofing can be integrated with the design of the home to create a pleasing appearance. In some cases, the beauty of a home can even be enhanced.

Another consideration regarding appearance occurs after the flood has subsided. If the home is not floodproofed, the property owner must repair and restore it, as described previously. During this usually lengthy period, the home will most likely be unlivable and its contents damaged or in disorder. On the other hand, if the home is floodproofed, the cleanup work after a flood will likely involve only landscaping repairs to the damaged yard. In general, a floodproofed home may be restored to its pre-flood condition fairly quickly at a relatively low cost.

- **Emergency Measures** - If standard floodproofing measures turn out to be impractical, there are other actions that the property owner may take to reduce flood damage. In general, greater reductions in flood damage may be achieved by working with someone experienced or trained in emergency flood protection measures. If there is sufficient warning, prior to a flood, the property owner can relocate items such as electronic equipment, furniture, and personal items from the basement or first floor to a higher level above the expected flood elevations, or they may be transported from the property to a safe location. Also, if there is ample warning, the property owner can participate in emergency flood protection measures such as sandbagging around windows and doors or boarding up entrances to the home.
- **Flood Insurance** - Property owners who do not presently have flood insurance should consider purchasing a flood insurance policy if they are located in a floodplain. This insurance will not reduce damages but it will lower the financial burden to the property owner when damage occurs. To find out if flood insurance is available in your community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Recommendations for Selecting Architects/Engineers and Contractors

Local building officials may require that plans and specifications for a floodproofing project be prepared by or under the direction of a licensed professional engineer or architect. The homeowner should check with local building officials to determine if this is a requirement before procuring a firm to carry out the project.

The coordination of construction work on a residence can be a difficult, time-consuming, and even frustrating process for the homeowner. It requires considerable knowledge of local building codes and permits, and may also involve hiring a variety of professionals, such as masons, craft specialists, plumbers, engineers, architect, or landscape architects. Most projects will also involve the legal processes of dealing with contracts. Without proper planning, the inexperienced person attempting this coordination for the first time could face a difficult, financially risky undertaking. There are two general processes a homeowner may follow to simplify this process. These processes include either obtaining architectural/ engineering assistance or hiring a general contractor.

Architectural/Engineering Services - The more complex floodproofing techniques will often require a professional architect, engineer, or some other type of specialized professional service. For example, the construction of a floodwall could require input from a soils engineer to assist in determining soil-bearing capacity, a structural design of the wall, a civil engineer to provide assistance in sizing drainage structures and sump pumps, and an architect to provide guidance in the placement of the wall to reduce the effect of the flood forces and improve the aesthetics of the finished project.

Some design firms employ professionals having expertise in only one particular area and this could require subcontracting of certain parts of the work. For a more complex project requiring a variety of services, the homeowner may wish to consider using a "full-service" architecture/engineering firm. A "full service" firm would be able to either provide all services in-house or coordinate the various expertise involved. Such a firm would be able to provide one point of contact between the homeowner and the design professionals involved in the project. This arrangement may not only provide better coordination of the project and a simpler line of communication, but would also serve to place potential liability for any problems with one firm or individual.

In evaluating architect/engineer firms, the homeowner should consider the following:

- Request that the firm provide a listing of projects similar to the one contemplated by the homeowner including former clients and telephone numbers, the dates of performance, and a brief scope of the work performed.
- Insure that the firm has familiarity with the project area including knowledge of contractors available to do the work, and knowledge of costs associated with various parts of the work.

- Landscape architects can help ensure that floodproofing techniques are provided in a practical and aesthetically pleasing manner. In addition, they can provide expertise in appropriate plant material, as well as site layout and grading.
- Proximity of the firm to the project site and its ability to respond for consultations on the project.
- Qualifications and background of the firm and specific individuals that would be handling the work including a description of which phases of the work could be provided in-house and any proposed subcontracts which might be included.
- A proposed time schedule for the completion date, realistic deadlines for each phase of the project, and the acquisition of necessary building permits, etc.

Once a firm has been selected, the question of a contract must be addressed. Both the American Institute of Architects and the National Society of Professional Engineers have standard contracts which may be used, or a simple letter of agreement may be sufficient. Homeowners should ensure that the contract includes a detailed scope of work in accordance with their wishes. Professionals typically recommend that a firm be selected on the basis of qualifications, and then a fee for the work be negotiated with the selected firm. A proposed labor hour breakdown on large projects will assist the homeowner in determining if the fee is in line with the work to be performed.

General Contractors - Contractors are normally also licensed in the state where they do business, and there may be local codes that have additional requirements for certain specialized contractors, such as electricians. Along with price, the criteria for selecting a contractor should be the same as those used for architectural/engineering firms. A general contractor will often use subcontractors in the project. Normally, the general contractor's fee will include all payments to subcontractors as well as management of the entire project.

When selecting a contractor, the homeowner should obtain estimates from two or more contractors on the same project and ask for explanations from each about the differences in price. Since each contractor may operate with different kinds of equipment, different standards of workmanship, and different degrees of experience, the final choice should not be based solely on the lowest bid, but also on the quality of work and the ability to deliver the product within budget and on time.

Homeowners should obtain photos of the contractors' previous projects or details of sites that can be visited to examine their work. They should ask previous customers in particular about the contractor's quality of work, timeliness, and whether the proposed budget was met. A call to the local Better Business Bureau can determine if any complaints have been registered against a particular contractor with the local agency.

- Has the contractor previously done similar work?

- Does the contractor regularly work on residential structures? Does the contractor thoroughly understand the work and will it be completed as specified?
- Does the contractor and any subcontractors carry liability insurance?

There are various forms of construction contracts used today, but the important items to check for are:

- Detailed Scope of Work
- Basis of Payment
- Period of Performance
- Warranties and Bonding
- Adequate Insurance Coverage

A sample contract may be obtained from your local jurisdiction or the MRBC to familiarize you with typical construction contracts.

The homeowner should accept work as final only when all provisions of the contract are satisfied. Never sign "completion papers" before the work is fully completed or make final payment if work is not completed. Before making final payment to the general contractor, the homeowner should insist that the contractor submit a statement that all subcontractors and material suppliers have been paid. If large sums of money are involved, the homeowner should insist that this statement be signed by the major subcontractors involved. If a subcontractor goes unpaid, in most states, that subcontractor has the legal right to place a lien on the home for the amount of payment. This generally means that the subcontractor would have to be paid and the lien removed before the homeowner would be able to sell the house.

Following these general selection and contracting guidelines, the homeowner should be able to enter into a clear client/contractor relationship on a floodproofing project.

Bibliography

1. Maumee River Basin Flood Control Master Plan. Maumee River Basin Commission/ Christopher B. Burke Engineering, Ltd., May 1995.
2. Draft-Proposed MRBC Cost-Share Assistance Program. MRBC Files, 1991.
3. Floodproofing Options for Virginia Homeowners. U.S. Army Corps of Engineers/ Commonwealth of Virginia Department of Conservation and Recreation, 1993.
4. Local Floodproofing Programs. U.S. Army Corps of Engineers/French & Associates, Ltd., June 1994.
5. Catalog of Residential Depth Damage Functions. U.S. Army Corps of Engineers, IWR Report 92-R-3, Fort Belvoir, Virginia 22060, May 1992.
6. Design Manual for Retrofitting Flood-Prone Residential Structures. Federal Emergency Management Agency, September 1986.
7. Floodproofing Bibliography. U.S. Army Corps of Engineers, National Floodproofing Committee, June 1988.
8. Floodproofing, How to Evaluate Your Options. U.S. Army Corps of Engineers, National Floodproofing Committee, December 1991.
9. Floodproofing Regulations. U.S. Army Corps of Engineers, EP 1165-2-314, Washington, D.C. 20314, March 1992.
10. Floodproofing Systems and Techniques. U.S. Army Corps of Engineers, Washington, D.C. 20314, December 1984.
11. Floodproofing Techniques, Programs, and References. U.S. Army Corps of Engineers, National Floodproofing Committee, February 1991.
12. Raising and Moving the Slab-On-Grade. U.S. Army Corps of Engineers, National Floodproofing Committee, 1990.
13. Report to Stakeholders, Federal Insurance Administration, 1991.
14. Federal Emergency Management Agency Information/Guidance Concerning Elevating Floodprone Structures in Conformance with the National Flood Insurance Program, 1993.
15. Repairing Your Flooded Home, American Red Cross/Federal Emergency Management Agency, 1992.

16. Retrofitting Floodprone Residential Structures (Brochure), Federal Emergency Management Agency, 1987.
17. Best Build III - Videotape, "Protecting a Floodprone Home," Federal Emergency Management Agency/National Home Builders Association, 30 minutes, 1989.

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