



KEBS Quarterly News

Land Planning · Engineering · Surveying
Soils Testing · Wetlands Planning

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Flood Plains: A Word to the Wise

Property that abuts or contains a river, lake, or stream is an attractive investment for potential homebuyers and developers. With the rewards of property that lies near a body of water, there is also the probability that there will be a 100-year flood plain associated with it. Builders, developers, and homebuyers are usually aware of the requirements of the local municipality and the Michigan Department of Environmental Quality (MDEQ), but the rules of the Federal Emergency Management Agency (FEMA) are often overlooked. Since strict and numerous requirements of the local municipality and MDEQ must be met before a building permit can be issued, problems with FEMA usually do not come up until someone tries to obtain a loan to cover construction costs. The rules of FEMA are complex, and if overlooked or missed, the penalties can be quite costly. As such, a few rules specific to FEMA that must be completed include the following: --*Article Continued on Page 2*



PUD and PD Design



As communities are faced with urban sprawl, loss of natural habitat, storm water management, and wetland preservation, Planned Unit Development (PUD or PD) is a concept growing in popularity. A PUD is a zoning vehicle that allows developers to deviate from strict adherence to zoning regulations. Generally, PUD status provides flexibility in the areas of lot size, street frontage, building setbacks and even the residential density in a particular zoning district. In return for these benefits granted to the developer, a new project will provide a specified amount of common open space. Alternatively land may be dedicated to the community or a public utility for use as a park, public facility, or needed easements.

KEBS is currently designing two Planned Development (PD) subdivisions in Delhi Township. If the site plans and concepts are approved, the PD label will actually become the zoning --*Article Continued on Page 3*

News Affecting You, Delivered to You!

Presenting KEBS' Quarterly News! This newsletter has been designed to inform you of news happening in your market: zoning changes, major legislation changes, and other information to help you better your business. So tell us what you want to see, what affects your business everyday, and the changes you foresee coming to the industry. We would be happy to research and include your ideas in our publication.

Send your article suggestions and subscribe to the e-mail newsletter by contacting Alisha Post at (517) 339-1014 or sending an e-mail to: newsletter@kebs.com.

Check out the newsletter online at www.kebs.com.



Case Study: The Pond, Boat, and Surveyor



- *The Challenge:* Obtaining elevations from the bottom of an irregular pond.
- *The Question:* How do we navigate around the pond, littered with dirt piles and obscurities, and produce accurate data?
- *The Solution:* Using GPS, a 50-foot grid system, a rowboat, and a little muscle, surveyors Gordon Paaske and Dick Datema, pictured left, rowed around the icy surface of the pond to pre-plotted points on the grid. When within two to three feet of a computed location, the survey crew would lower a 25-foot extendable grade rod into the water, measuring the depth of the pond

at that point. Besides some laughter about the difference between starboard and port, the survey was a success.

- *The Moral:* No matter the challenge, KEBS has the solution! --Glenn VanderMolen, Haslett Surveying Manager

Soils and Wetlands Office Reflects on a Successful First Year

The KEBS Soils Office opened its doors in 2004 and quickly plunged into a busy construction season. KEBS now offers a full range of construction quality control testing services for soils, aggregates, concrete and asphalt. Services include soil bearing tests for building foundations and testing for subdivision roadway certifications. Our in-house materials testing laboratory is fully equipped to provide soil and aggregate gradations and classifications, Modified Proctor compaction testing, 7-day and 28-day compressive strength testing of concrete, and asphalt extraction testing in accordance with MDOT and ASTM specifications.

KEBS was involved in a variety of construction projects over the course of the year including building construction at The Pointe Professional Center in East Lansing and at Battle Creek Air National Guard Base, as well as building additions and renovations at Delta Township Retirement Center, First Lutheran Church of Charlotte, and Seventh Day Adventist Church near Howell. KEBS also performed soil bearing tests and footing certifications at the Hawk Nest and Eagle Eye residential developments in DeWitt Township and at the Aspen Circle condominium development in Delhi Township. Subdivision road certifications included Aspen Circle and Glenmoor Manor No. 5 in Delhi Township, and Sanstone Estates in Charlotte.

KEBS also performed geotechnical investigations at a number of sites across the Mid-Michigan area. These studies, which are typically performed at an early stage in the site development process, involve the drilling of test borings at site-specific locations, pictured above, in order to develop recommendations for building foundations, pavements, earthwork, groundwater control and other related aspects of construction.

--Jim Cruickshank, P.E., Soils Project Engineer



Flood Plains: A Word to the Wise --Continued from Page 1

- An application for a Conditional Letter of Map Revision based on Fill (C-LOMR-F) must be sent to FEMA. All proposed information must be submitted with this application including an Elevation Certificate of the proposed structure.
- After construction is complete an application for a Letter of Map Revision based on Fill (LOMR-F) must be submitted to FEMA. This must be done to ensure the structure was built according to the design as submitted to FEMA.
- When fill has been placed on a property to elevate a building site above the 100-year flood plain boundary, FEMA will not allow any potentially livable or usable space to be created below the main floor of the structure. In other words, only a crawl space not over 4.5 feet high will be allowed. Several permanent openings must be within 1 foot of the lowest adjacent grade to the proposed structure. All machinery and or equipment servicing the building must be on a floor above the 100-year flood boundary.

Flood insurance is expensive, and if all the rules that FEMA implements have not been followed, the cost of flood insurance can be twenty times the normal cost. --Jeffrey K. Autenrieth, P.S., Vice President of Surveying, Haslett



Merging Old and New: HGB Hospital

Nearing completion of their Imagine HGB project, pictured right, Hayes Green Beach Memorial Hospital integrated existing facilities with a new building added to enhance available local technology and modernize existing facilities. The community will benefit from the health practices that are coming to the area, the advanced medical technology available locally, and much more. KEBS partnered with general contractors Weigand Construction, and Robins & Morton as well as sub contractors C&L Trucking and Excavating, Capital Contracting, Delta Electric, Cascade Cement, and Clark Construction to provide construction staking services for the 48,000 square foot building site, asphalt parking areas, curb and gutter, sidewalk location, and both above ground and underground utility relocation and improvement related to the expansion throughout all phases of this multi-year project. The final phase is nearing completion and is expected to open in March 2005.

--Dave Bowerman, P.S., Charlotte Surveying Manager



KEBS Welcomes New Talent to Brighton Office



KEBS, Inc. is pleased to announce the addition of Christopher Beland, P.S. to our Brighton office as Survey Manager. Chris joins KEBS with nearly 10 years of site development, survey management, and field experience. Chris has worked extensively in the areas of boundary, topographic, ALTA/ACSM, and construction surveying. In addition to his experience, Chris received his Surveying Engineering degree from Ferris State University and obtained his Professional Surveyor's License in 2002. Chris will play an integral role in the development of KEBS' Brighton survey market and lead area survey crews.

It's What We Do!

With more than 25 years experience and five offices strong, KEBS continues to grow and diversify service offerings, bringing the most up-to-date land development and planning solutions to our customers. Starting with our core, surveying and engineering, KEBS diversified service offerings to include:

- **Surveying** – Lot Boundary, Construction, House/Plot, Topographical, and Flood
- **Engineering** – Commercial Site Design, Subdivision, Municipal, and Storm Water Management
- **Land Planning and Landscape Architecture** – Residential, Commercial, and Site Design
- **Municipal** – Design and (Re)construction of Roads, Trunk Sanitary Sewers, and Water Mains
- **Soils and Construction Testing** – Geotechnical, Construction Quality Control, and S.U.E.
- **Ecological and Wetlands** – Delineation, Mitigation, and Tree Surveys



PUD and PD Design --Continued from Page 1



designations for the parcels. The Delhi PD zoning allows for a mixed-use development with diverse housing options, as well as the integration of office or commercial interests. The Township mandates that a minimum of 25% of the land be designated open space, with a graduated scale for the granting of bonus housing density in exchange for providing higher percentages of open space. Prior to adding bonus units, a base number of housing units is derived by demonstrating the quantity that could be built when meeting the regular zoning requirements. Delhi refers to this as a "Parallel Plan" and Meridian Township has a similar document called a "Yield Plan".

The projects in Delhi will have a mix of apartments, condominiums and single-family lots, with one subdivision incorporating two small retail buildings. The goals are to meet the different income and housing needs in the community, and to provide a variety of neighborhood services. --Bruce Stewart, Landscape Architect

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We're on the Web!



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**Knowledge
Quality
Commitment**

Trees Add Beauty and Value



Trees are important assets that provide us with a variety of social, environmental, and economic benefits. They can moderate climates indoors and outdoors, are sources of building material, and can provide food and shade for both people and animals. However, the financial benefit trees provide is often overlooked. Trees are assets that require serious consideration when selling or purchasing a home or vacant piece of land. Mature trees can add value to a home by acting as a barrier to noise, screening to objectionable views, guarding the home from the elements, and increasing the visual appeal of the property.

Well-maintained trees are an asset to the owner as well as an enticement to potential buyers. Consequently, poorly maintained trees can be hazardous, add substantial liability, and may decrease property value. At KEBS, we understand the numerous benefits trees can provide and recognize the roles they play in our daily lives. Our Wetland and Environmental Specialist, Doug Longpre, has received his ISA Certified Arborist certification. Doug is familiar with local environmental regulations and is available to assist you with your tree and environmental questions. Doug can consult you on regulations specific to land clearing, tree care and removal, tree condition, tree surveying, and tree mapping. Give Doug a call for more information about environmental services or to discuss Tree/Environmental Ordinances in your area.

Do you live in a "Tree City"? For a list of cities that have a Tree Ordinances in place, please visit our website at www.kebs.com. --Alisha Post, Marketing Director

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