

SITE ASSESSMENT

Hanover High School

On December 21, 2001, staff of The Berkshire Design Group, Inc. visited four Hanover Schools campuses in Hanover, Massachusetts. The sites included in the investigation were Hanover High school, Sylvester Elementary School, Salmond School and Curtis School. The purpose of the visit was to visually assess the condition of the sites and associated infrastructure. This preliminary site assessment has been prepared after a course of interviews, site visits and investigation of local municipal records.

The following is a summary of our conversations, observations and additional research to date relative to the Hanover High School site:

LOCATION

The existing Hanover High School is situated on approximately 101 acres, and the main access is from Cedar Street. The Cedar Street Elementary School is located on the abutting parcel northeasterly of the site and the elementary School also has access from Cedar Street, however there is no vehicular connection between the two schools. Drinkwater River borders the school on the west and north. The south side of the parcel abuts Cedar Street. There is a residential lot on the southeasterly corner of the parcel, located between the High school drive access and the elementary school access.

SITE SOILS

Research of Board of Health records indicates that the soils on site are granular sandy soils. Based upon conversations with the local supervisor, the site apparently was a previous plant nursery/farm, and when the existing school was constructed, a large portion of imported soil was placed on the site. The imported soil, (based strictly on the verbal conversations), consists of fine to medium sand with little or no stones or cobbles.

The site is bordered on the west by a wetland and Drinkwater River. The proximity of this river and associated wetlands may be indicative of the site containing buried muck/peat, and a comprehensive boring investigations should be conducted to determine if there is any buried peat and to confirm the consistency of the fill material. Both of these items may significantly affect the construction cost of any new structures built on the site.

PLAYING FIELDS:

The project site contains a tennis court, EDM running track, lighted football field, softball field, and baseball field

The tennis courts were installed in 1972, were torn out and replaced in early 1990's, and last year were resurfaced. Currently the tennis courts are in excellent condition. This court gets a lot of community use, as this is the only tennis court in town available to the general public.

The running track is a full paved rubberized finished track (EDM). The Tracklite Company resurfaced the track this year, (2001), and the track is in very good condition. The track is fenced in to protect it from vandals entering the track with vehicles.

The main athletic field, (football) is in good condition, and has an irrigation system. There have been no problems in the past with drainage on the athletic field. (in fact the field is often requested by other towns because it is usually dry earlier in the season than other fields). Since the field does drain so well, irrigation is critical. Irrigation is provided by 2 shallow wells located in the northeastern corner of the site. The football field is also lighted.

The baseball field is located easterly of the football field, and is in relatively good condition. The baseball field is also irrigated by the wells.

The softball field is located southwesterly of the football field. The field is in good condition, however, due to site constraints, the southerly football goalpost is located in the center of the softball field. During softball season, the goalpost must be removed from the football field to allow play on the softball field.

ACCESS, PARKING AND CIRCULATION

The site has two main drives, which serve as a drop off loop in front of the school. This drive loop forms a central "common" in front of the school. There is parking along the northern end of the loop, directly in front of the school. The main parking lot is located on the easterly side of the school. Access to this large parking lot is through the northeasterly corner of the "common" area. Deliveries and maintenance access to the rear-northerly portion of the building is through the large parking lot. During afternoon dismissal, when busses are arriving/loading, and parents are arriving for pick-up, and the on-site vehicles are attempting to leave, the intersection at the northeast corner of the common becomes very congested and does not function well.

This is compounded by the recent constructed gravel "student" parking lot at the easterly entrance drive. The traffic delineation through this gravel parking lot is not well defined and some of the traffic entering/exiting the main parking lot also enters/exits near the same location.

In general, the number of parking spaces as currently on site are inadequate. During the beginning of the year, the daily traffic spaces are typically adequate, however, as the year progresses, more students obtain licenses and bring their cars, thereby gradually increasing the parking demand as the year progresses.

The site also houses the annual Town Meetings in the gymnasium. As is typical in most communities, whenever there is a large turnout for this event, parking becomes an issue, and any expanded parking on site would improve the parking scenario during those events.

SPECIAL ENVIRONMENTAL CONCERNS

The Massachusetts Natural Heritage Atlas, (2000-2001 Edition) was checked and it was determined that the site is NOT located within an area designated as a “Priority Habitat of Rare Species”, nor is it located within an “Estimated Habitat of Rare Wildlife and Certified Vernal Pools.

MASSACHUSETTS ENVIRONMENTAL PROTECTION AGENCY, (MEPA):

An Environmental Notification Form (ENF), for this project may be required to be submitted to the Massachusetts Environmental Protection Agency, (MEPA). A site visit will be conducted by MEPA and a Certificate from the Secretary of Environmental Affairs will need to be issued by MEPA, stating that the project whether or not the project will require the filing of an Environmental Impact report.

SITE UTILITIES

Water: The site is serviced by municipal water. Mr. Conant was not aware of any past problems with either the water. The site does have irrigation wells on site, two of which are in active use. (The third well located near the track is currently not in use). BDG to contact the local water department to investigate any unusual water infrastructure or associated water conditions)

It is highly recommended that a fire flow test be conducted as soon as possible so that any unforeseen problems with the water can be addressed early in the design/decision making process.

Heating Fuel: The building is currently heated municipal gas. Buried oil tanks previously served the site, but those tanks were removed in the earl 1990’s, according to then current environmental guidelines.

Sanitary Sewer System: The site is serviced by an on-site sanitary sewage disposal system. Treatment consists solely of a septic tank with dosing pumps. The existing system also has a 1000 gallon grease trap locate near the cafeteria. A new leaching system was installed in early 1990, replacing a failed leaching fields located in the baseball fields. The school has a student population of 676 students, and assuming a 15% teacher/staff ratio, results in a total population of 774. As such, the State Sanitary Code estimates that the school will generate approximately 14,000 gallons per day of sanitary sewage. Any modification to the school or anticipated loading for the septic system will require obtaining a permit to ensure that the modification conforms to current sanitary design standards.

Since the “design flow” for the school is over 10,000 gallons per day, a groundwater discharge permit would probably be required if there were any modification to the existing loading of the system. (All systems that generate over 10,000 gallons per day require a groundwater discharge permit.) This is significant since a groundwater discharge permit requires that the sewage effluent meet specific chemical and biological requirements. The only way to accomplish those required levels is through the use of a sewage treatment plant, and a sewage treatment plant is expensive to design, permit, build, and operate. For any system over 10,000 gallons per day, the design of the treatment system and associated groundwater disposal permit must be submitted to the Massachusetts Department of Environmental Protection for approval.

The requirement to obtain a groundwater discharge permit MAY not be required IF the school can produce records indicating that the existing and any proposed sanitary sewage flows will be less than 10,000 gallons per day. If the flow is less than 10,000 gallons per day, then a “conventional septic tank” system can be used and any modification to the septic system must be submitted to the local Board of Health for approval. If the school has any science laboratories, then an industrial waste holding tank, (commonly referred to as a “tight tank”), would also need to be permitted and installed.

NOTICE OF INTENT - WETLANDS:

It is important to determine the exact limits of the wetland resource area early in the concept phase of any project so that the project will be developed in accordance with local and state environmental requirements.

There are regulated wetlands located along the westerly side of the site, and Drinkwater River is located within those wetlands. There is also an area of wetlands directly to the south across Cedar Street. The exact limits of these resource areas may have a direct impact on the areas that may be utilized for future construction. Discussions with Janine Delaney of the Hanover Conservation Commission confirm that these are wetland areas and that the Drinkwater River is a perennial stream subject to the Rivers Protection Act. Although nothing official can be established until a formal filing is made with the conservation commission, it is recommended that this area be further investigated to determine the exact extents of any wetland and the exact delineation of Drinkwater River.

The wetlands and associated Drinkwater River that are located to the west of the school building present a formidable consideration with respect to possible future expansion. The Rivers Protection Act protects as a resource all areas within 200 feet of the stream. Any development within this 200-foot area is not only regulated, but also must be fully justified as to whether or not any viable alternatives are available. Given the size and relative flat topography of the remainder of the site, it may be difficult to justify to the local Conservation Commission and the Massachusetts Department of Environmental Protection that there are not viable alternatives to working within that 200-foot resource area.

Given the fact that the delineation of the wetland resource areas may have a significant impact on the proposed school renovation/addition, the exact location of the boundaries of these areas should be established as soon as possible. This would be accomplished by flagging the resource areas, surveying the flagged locations and then filing a Request for Determination of Applicability with the local conservation commission. Prior to establishing the exact limits of these wetland resource areas, at least the conceptual design should endeavor to avoid or minimize encroachments into these areas.

In any case, if any work is proposed within 100 feet of any wetland, or within 200 feet of any perennial stream, then an application would be required to be filed with the local Conservation Commission.

DRAINAGE:

The site is currently served primarily by open sheet flow of drainage with some closed drainage systems in the immediate vicinity of the school buildings and track. The closed drainage from the building outlets to the wetlands to the west. The storm water from the closed drainage systems has not presented a problem on the site in the past.

There is a problem associated with the drainage of the large parking lot, in that the lot is drained via leaching basins. During rainfall events, the basins in the parking lots do not have the capacity to accommodate the rainwater and as a result there is significant ponding on the parking lot. This is clearly evident in the northeasterly corner of the main parking lot, which has over 6 inches of standing water even on a mid storm event. Due to the flat nature of the parking lot, the ponding covers a significant portion of the lot. Any minor existing surface drainage problems appear to be readily addressed without a major undertaking or cost.

Although the athletic fields drain well and have not experienced any problems with inadequate drainage, the track on the other hand does not drain well during heavy rains.

If the proposed project will significantly increase the amount of impervious area, then the design must include provisions to comply with the new DEP policy on stormwater management. The policy requires stormwater quality management as well as attenuation of any peak flow rates. This may require the construction of retention/detention basin(s), stormwater treatment chambers, and/or water quality swales. Typically stormwater management ponds are not desirable on a school. It would be advantageous to minimize any increase in impervious area. Any modification to the project will still entail improvements to the stormwater quality, which typically require as a minimum additional catch basins with 4 foot sumps.