

Staff Responses to Council Questions October 20, 2015

At the request of Mayor Tully, there is a proclamation prior to the start of the council meeting for National Cyber Security Awareness Month.

6. Active Agenda

A-D. Building Code Ordinances

Has the Economic Development Corporation taken a position on the proposed code amendment?

Yes, the EDC supports the proposed amendments (please see the attached letter).

Do the following municipalities allow the construction of Type III buildings?

Naperville - Type III construction allowed

Lisle - Type III construction allowed

Hinsdale - Type III construction allowed

Clarendon Hills - Type III construction allowed

LaGrange - Type III construction allowed

Please provide some background on the fire treated wood that can be used in Type III construction. When did this technology become available?

Fire retardants for wood began in the 1820s utilizing ammonium phosphates and borax. When the 1900's came around new formulations were developed based on silicates, sulfates, borates, phosphates, zinc, tin, and calcium. In 1930-1935 the USDA Forest Products Laboratories (FPL) investigated over 130 different inorganic fire retardant formulations.

In the 60's to 70's the use of fire retardants quadrupled as the increase of awareness of considerable safety benefits of fire retardants. There were some slight concerns of the fire retardants as to the strength and corrosives problems of the first generation inorganic formulations. In the 80's a second generation of formulations were developed to correct the issues that were affecting the first generation formulation.

In 1991, ASTM (American Society of Testing & Materials) developed a protocol for testing the performance of fire retardant treated soft wood. The standardized testing protocol resulted in more predictable performance of treated wood and greater confidence among fire fighting and building code professionals that treated wood could be used for building construction. The use of fire treated wood increased since the creation of the ASTM testing protocol.

Did the building code regulations change to reflect changes in this technology?

Yes. The building code published in 1996 (BOCA Code, 1996 edition) classified fire treated wood as a combustible material and therefore it was not allowed in load-bearing walls and exterior walls. The next generation building code published in 2000 (International Building Code, 2000 edition) classified fire treated wood as a non-combustible material and specifically allowed it to be used in load-bearing walls and exterior walls.

As stated above, in 1991 ASTM developed a performance test for fire treated wood. The 1996 BOCA code and the International Building Codes both include performance requirements based on the ASTM test. The Village's original prohibition on wood construction in the downtown was in place prior to the development of the ASTM test and the 1996 building code performance standard.

What has been the Village's experience with this product?

Staff has had no issues with the use of fire-treated wood in buildings in the Village.

If there is no financial impact, why are we reducing safety and lowering requirements from Type 1 to Type 3?

The proposed revisions aim to balance the competing goals of maximizing life-safety standards and aligning Village regulations with the current regulatory environment. With the proposed changes the Village will still have higher standards than the international codes and in many cases higher standards than our neighboring comparable communities.

By definition the Construction Types represent the level of resistance to fire with Type I offering the most resistance to fire and Type V offering the least. The reduction in the level of life safety protection from Type II to Type III is extremely small due to the existing and proposed local building code amendments that apply to Type III construction. These amendments include fire sprinklering throughout the building and additional fire protections around I joists and open web wood trusses. Fire sprinklers are required to be installed in both Type II and Type III buildings pursuant to Village Code. Automatic fire sprinklers greatly enhance the ability of a structure, of any construction type, to withstand fire and prevent total loss. Automatic fire sprinklers are required in all multi-family residential, assembly, institutional, and hazardous uses regardless of size of structure as governed by the International Building Code. Business uses over 1,500 square feet would require sprinklers as would all other uses over 2,500 square feet. The additional fire protection measures being proposed on wood trusses and wood I joists would further mitigate the risk of damage and loss by giving more time for fire fighting efforts.

Why would Staff make these recommendations now knowing that 3 current projects would likely come back to the Village with plans that would reduce the safety, quality, value to save themselves costs and increase their profits?

Staff prepared the code amendments for Council consideration for the following three reasons:

Council Direction & Discussion - During the Long Range Planning meetings held this past summer, the Village Council identified two priority actions related to the proposed code amendments (*Review the Building and Development Permitting Process* and *Develop Business Friendly Metrics*). The proposed code amendments regarding Type II and Type III construction types were discussed during these meetings.

Economic Development Corporation Strategic Plan Recommendation - The Downers Grove Economic Development Corporation identified the issue of the prohibition of Type III construction in the downtown in their 2014 Strategic Plan. The EDC Strategic Plan recommends that the Village re-examine this local building code requirement.

Requests and Inquiries by Developers - Over the past several years, staff has received inquiries and requests from developers to consider amending local building code requirements related to the use of Type III construction in the downtown. The developers of the Burlington Station (former TCF Bank site), Marquis on Maple, apartments approved at Rogers & Prospect and the proposed apartments at Curtiss & Washington have asked the Village to re-examine this local building code requirement. Further, developers considering redevelopment projects in the downtown have also asked the Village to re-examine this issue.

If the code amendments are approved, the developers of these four projects may elect to design or redesign their buildings as Type III construction. The reduction in the level of life safety protection from Type II to Type III is extremely small due to the existing and proposed local building code amendments that apply to Type III construction.

Did the Marquee on Maple developer promise luxury condos and was granted a special use knowing that they had to abide by codes that required safer and better-quality Type I Construction?

The developer is and has been aware of all Village Codes including the local prohibition of Type III construction since the development was first proposed in early 2014. Staff has reiterated several times during the building permit review process that Type III construction is prohibited.

Has the developer of the Marquee on Maple talked about lowering construction costs by making these changes?

Yes, the developer of the Marquis on Maple has requested that the Village allow Type III construction. On Monday, October 19, the developer re-submitted plans for this project in response to a Village review letter. The re-submitted plans show Type II construction.

Has any developer that has already gone through the Plan Commission and/or Council indicate

that they may have problems meeting the Type 1 construction requirements? Has any developer that has gone through the Plan Commission and /or Council indicated in any shape or form, written or verbal, on or off the record that they may cancel or threaten to cancel their project if they are held to Type 1 Construction?

Yes, the developers of Burlington Station, Marquis on Maple and the apartments on Rogers & Prospect have indicated that the cost of using Type II construction is high and may negatively impact their ability to deliver a development with their desired financial return.

How much cost (money) does the Marq, on Maple expect to save (profit) by reduction from Type 1 to Type 3 construction costs? Best estimate or any amounts discussed.

The developer of the Marquis on Maple indicated that the cost difference between Type II and Type III construction is about \$1 - \$1.2 million.

How much cost (money) will the Burlington Station project save (profit) by reduction from Type 1 to Type 3 construction? Best estimate or any amounts discussed.

In 2013, the developer of Burlington Station submitted a concept plan for a mixed use development with 78 apartments and 11,500 square feet of commercial space. The developer indicated that the cost difference between Type II and Type III construction was about \$835,000. Kane McKenna and Associates (KMA) reviewed this cost estimate and confirmed that the additional cost of construction for Type II was \$9.38 per square foot (about \$835,000).

Has any developer threatened to walk out of a project or threatened legal action if the code requirements aren't reduced from Type 1 to Type 3 construction?

No developer has threatened legal action over the current code requirements or the proposed amendment.

Doesn't cheaper construction reduce the values of these buildings and thus hurt the assessed values?

Staff contacted KMA for assistance in responding to this question. According to KMA, the type of construction will not materially affect assessed value. While most assessors consider the construction cost when assessing a building, the taxable value of comparable buildings in the area has a much greater effect on the assessed value. The type of construction is not reviewed or considered when determining comparable properties.

What is the estimated value of the Downtown TIF with the Marq on Maple being built? What will the loss to the estimated Downtown TIF be if the Marq on Maple is abandoned? 1 year? Two years?

The Marquis on Maple is expected to generate approximately \$500,000 per year for the Downtown TIF Fund starting in 2019 and continuing until the expiration of the TIF in 2021 (3 years of tax increment). If the development does not take place, approximately \$1.5 million of expected revenue to the Downtown TIF will not be received.

What would the height limitation be for Type IIIA construction in Downers Grove DB districts if Type III passes this evening?

The maximum height of a Type III building is 70 feet. Maximum height is regulated by building code requirements and zoning ordinance regulations.

Building Code Height Regulations - The maximum height of a fully sprinklered building of Type IIIA construction depends on the uses located in the building. There is a myriad of possible combinations of uses; Parking under Residential. Parking under Business, Institutional, Mercantile, etc. The tabular Building Code height allowance with an allowed increase for having sprinklers, under certain scenarios, could bring the allowable height over 65'.

Zoning Ordinance Height Regulations - The Zoning Ordinance permits a maximum height of 70 feet in the DB zoning district. Buildings constructed at this height would be subject to additional robust life-safety requirements for high-rise structures.

In many jurisdictions the height limitation appears to be 65 feet. What is the height of Marquis on Maple?

The Marquis on Maple is 59 feet in height.

Please provide comments on the attached article.

The article provided “A Quick Review of Type 3 Construction & Associated Fire Danger” raises concerns including combustible interior beams and wood trusses and void spaces. Staff agrees that these are concerns with Type III buildings that lack automatic fire sprinklers and are constructed with unprotected wood trusses. These issues and concerns are addressed by requiring the installation of automatic fire sprinklers and additional fire ratings around wood trusses and I joists.

7. First Reading

B. Ordinance: Adopt the Fiscal Year 2016 Budget in Lieu of Passage of an Appropriation Ordinance

Would you please provide a current list of the 2015 expenses and anticipated 2016 expenses related to any grants/subsidies we provide which one might reasonably consider social services? ie. donations to DSSC, PADS, Family Shelter Services, Dial-A-Ride, Senior Taxi Cab Coupons, Subsidized Rent (counseling services), SEASPAR, etc.

In addition to the 2015 DuPage Senior Citizens Council contribution, the Village has the following contributions:

	2015	2016	
Expenses			
Taxi coupons	45,000	45,000	

DGN and DGS High Schools Alcohol free activities	1,000	1,000	
	46,000	46,000	
Subsidized Rent			
Counseling Services	24,000	24,000	estimated subsidy

Also, in "back of the napkin" style, please make a list of those organizations with which our Public Safety folks regularly interact.

SALT (Seniors and Law men Together), Sharing Connections - (furniture for fire victims), Diveheart (occasionally fill SCUBA tanks), PADS, Family Shelter Services, 360 Youth Services (child welfare agency)

C. Information: Facilities Sustainability Plan - Committee Room

I'd like an approximation of the total \$\$ and hours spent on facilities considerations since 2005, "back of the envelope" is fine.

The Village's costs for facility planning activities since 2005 are estimated to total between \$290,000 and \$330,000 and include the following:

- 2006 contract with PSA Dewberry to complete a Facility Needs Study - \$153,400
- 2012 contract with ISES Corp. to complete a Facility Condition Assessment - \$38,075
- 2013 contract with Kane McKenna for TIF financial analysis - \$1,625
- 2014 contract with Williams Architects for preliminary conceptual design work - \$12,247
- 2015 contract with Houseal Lavigne for publication design and layout - \$9,800
- Staff does not track actual hours spent on facility planning related tasks. However, it is estimated that between 1,000 to 1,500 staff hours were incurred during the past 10 years related to Police Station and Village Hall facility planning. A significant portion of those hours included the work of an interdepartmental staff team of eight employees assembled to assist with the Facility Needs Study in 2006-2007. 1,000 to 1,500 hours at an average fully-loaded cost of \$75/hour totals between \$75,000 and \$112,500.

Online Comments

There are no online rEmarks.

ATTACHMENTS

Letter from Economic Development Corporation

Article Submitted with Council Question Regarding Type III Construction



Downers Grove Economic Development Corporation

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Date: October 20, 2015

To: Mayor Tully and Village Commissioners

From: Michael Cassa, President & CEO
Downers Grove Economic Development Corporation

Re: Proposed Change to Building Code

The Village Council is considering proposed local amendments to the 2006 International Building Code. One of the proposed amendments pertains to the restriction of Type III construction in downtown Downers Grove. The current code restricts use of Type III construction in the downtown zoning district. The proposed amendment would permit Type III construction throughout the Village.

The review of the existing building code is consistent with the Village's Long-Range Plan. Under the "Develop Business Friendly Metrics" project, the Long-Range Plan calls for an assessment of "Village regulations, fees and services on businesses and compare the impacts to other municipalities." In addition, the DGEDC Strategic Plan recommends that the restriction on Type III construction in the downtown be reviewed.

The research conducted by the Village indicates most of the neighboring municipalities do not restrict the use of Type III construction. This includes those bordering communities that Downers Grove directly competes with for commercial projects: Darien, Lisle, Lombard, Oak Brook, Westmont, and Woodridge. In addition, Downers Grove also competes with other communities in the Chicago area that also do not restrict the use of Type III construction.

The competition for commercial projects is intense. Developers and tenants conduct a thorough review of the costs of a project as part of the due diligence process. This review includes costs of construction. The restriction of Type III construction significantly increases the costs of doing business in downtown Downers Grove. Downtown redevelopment is generally more difficult because projected lease revenue from the project is constrained by two factors: (1) the sites are generally small, limiting the ability to expand the leasable space; and (2) height requirements limit the ability to increase the number of leasable units. Once the developer determines the potential revenue of total leased space, the focus is on the costs of the project.

In 2013, the development company that owns 5100 Forest in downtown Downers Grove submitted a Pro Forma to the Village regarding a proposed redevelopment of that property. The Pro Forma was intended to support the developer's request that Tax Increment Financing be considered for this project. The Pro Forma included a detailed financial summary of the project. The summary indicated that the cost of construction would be increased by \$835,380 due to the requirement that Type II construction be used, instead of Type III construction. The Pro Forma was reviewed by Kane, McKenna

and Associates, Inc. in October 2013. Kane, McKenna is a respected financial services firm that specializes in municipal economic development and public finance. Kane, McKenna issued a report which included an analysis of the redevelopment project costs. Under the Project Cost Analysis section, Kane, McKenna did verify that the developer's additional costs (or "premium") of Type II construction were "within industry averages for residential development."

The Downers Grove Economic Development Corporation works closely with the Village and the Downtown Management Corporation on the attraction of downtown redevelopment projects. When developers and other businesses conduct their due diligence to determine the costs of a potential project, it is important that "costs of doing business" in downtown Downers Grove be in line with those communities that we compete with.

The Downers Grove Economic Development Corporation supports the proposed amendment to the building code that would permit Type III construction in all zoning districts.

Chief,

Dave has suggested that if I had concerns, I could forward to you.

I still believe that Type 1 construction is safer than Type 3. I know I do not have the firefighter experiences, but the fire I saw and the aftermath convinces me. Also, the quality, the value held over time, noise, etc. are other factors.

I found this on the net- Firefighternation.com

A Quick Review of Type 3 Construction & Associated Fire Danger

Not So Ordinary

This month's drill will focus on ordinary construction, also called Type 3. A general definition of ordinary construction: a building featuring exterior masonry walls and combustible interior beams or truss. Although it's not the most often used building type today, Type 3 construction has been used a great deal for commercial buildings built in the last 2 centuries.

Ordinary construction buildings have a long history of difficult fires. As well as the combustible nature of the construction, you'll often find a very heavy fire load in these buildings. Here are a few discussion points to cover about ordinary construction at drill time.

Void Spaces. Just like in a balloon frame house or really any wood-frame building, Type 3 buildings feature lots of void spaces created by the construction process. Combustible void spaces between floors and in the attic are places where fire can go undetected and be difficult to reach.

Masonry Walls. The load-bearing exterior masonry has a huge potential for collapse. Don't put a lot of faith in rules of thumb concerning time limits when operating in these structures. If operating defensively, pay close attention to apparatus placement and deployment of crews in flanking positions outside the collapse zone.

The masonry walls serve both to carry the load of the building and prevent fire extension into adjoining buildings. But don't trust these walls to hold the fire. Over time, the walls will start to deteriorate, allowing the fire to find places to pass through.

I was wondering if you had any comments on the above. Obviously it is "less safe".

<http://www.firesciencereviews.com/content/2/1/4>

Potential approaches for fire retarding wood

Limited progress has been made in the flammability reduction of wood in recent years. Some of the fire retardant timber treatments are two millennia old, where alum was used by Romans. Since then, the synergism between phosphorus and nitrogen, and often boron too, has been widely studied in academia and exploited in various commercial products. Nowadays, many end-users and regulators recognise the hazards presented from the toxicity, smoke and corrosiveness of fire retardant compounds, due to the large volume of attention given to halogenated flame retardants. There is a current contentious toxicity problem with boron and as such, a need for wood products to move away from boron based fire retardants is recognised. From literature describing the fire retardancy of timber and various polymers, the following options show the greatest potential.

Phosphorus based compounds

Phosphorus based compounds are some of the best known fire retardant treatments for timber. They are considered to work mainly in the condensed-phase, by promoting char formation and depriving the gas-phase of further volatile decomposition products. It is suggested that depending upon the chemistry of the additive, they also work in the gas-phase as flame inhibitors, interrupting the cycle of free radical generation. Some organophosphorus compounds are thought to be sufficiently stable under flaming conditions to work by a physical gas-phase action, in which they act as a blanket to exclude oxygen from the flame (Schartel [2010](#)). Van der Veen and de Boer ([2012](#)) have reviewed the properties and toxicity of various phosphorus based fire retardants.

A significant problem of some phosphorus based fire retardants (e.g. monoammonium phosphate, MAP), encountered predominantly in the United States, is the in-service reductions in strength of treated wood products (particularly plywood roof sheathing). This reduction in strength occurs when wood members are exposed to elevated temperatures that are often experienced as a result of solar loads in roof applications (LeVan and Collet [1989](#)). It is attributed to both the initial pH of the wood and the buffering capacity of the fire retardant system (Winandy [1995](#)). As a result, boron treatments were advocated as the solution to the phosphate problem (Winandy and Herdman [2003](#); Winandy and McNamara [2003](#); Winandy and Richards [2003](#)). Of course, given the reclassification of the toxicity of boron, alternative solutions, such as silicon, may require investigation for roofing applications.

There are a wide range of phosphorus compounds that impart fire retardancy to polymers, due to the existence of several oxidation states of phosphorus, 0, +3 and +5 (Morgan and Gilman [2012](#)) and the large number of possible structures that can be attached to an atom with five chemical bonds. Elemental red phosphorus, phosphonates and phosphinates are all typical fire retardants; in wood, phosphorus is most commonly used in an inorganic form, typically promoting char formation rather than gas-phase inhibition.