Abstract: Modern architecture is a product of national economic, political, historical and technological development, and has certain times and nationalities. With the advance of social intelligent construction, the development of building electrical system is one of the main contents of modern building development. Therefore, how to combine intelligent network technology, multimedia technology, communication technology and modern architecture, realize the automation of building monitoring and the efficient management of information, create a good living environment or working environment for users, and it is the current construction industry concern of the key content. This article on building intelligent in the construction of electrical applications in the existing problems and countermeasures to study, hoping for the development of modern architecture to make a modest contribution.

Key words: Modern architecture; intelligent; building electrical system; application; development
norms.

1.3 Security issues

① Electrical grounding problem

At present, the electrical grounding problem is one of the main problems of building electrical system. If not a professional intelligent grounding, the entire power system will exist security risks. Such as the construction of overhead cable construction, must be repeated grounding, in order to ensure safety and stability. This is due to the construction of electrical equipment leakage, will affect the overall electrical system security.

② Line aging problem

At present, the outer coating of the wire and cable used in the intelligent building is mostly rubber and plastic, and the long-term exposure to the outside will produce corrosion, even the outer rubber or plastic fall off, the line insulation loss. Especially in the case of wet weather, prone to fire and other disasters. In addition, some non-quality certification of the wire, there are often some security problems.

③ Building mine problem

So far, many building electrical personnel still take the traditional method of building mine protection system, but this way is a lack of theoretical basis. For modern intelligent building lightning protection design, we should try to select the metal texture of the mining equipment, and do mine grounding work, in order to achieve the balance within the building to improve the safety of intelligent building properties.

④ Personnel management issues

At present, the domestic construction of electrical personnel in the electrical installation and construction experience is a relatively lack of overall construction efficiency is low, the quality is not guaranteed. Although the electrical staff has high technical skills, but its lack of a certain architectural experience, will lead to construction plans and construction drawings do not match.

2 Building intelligent in the construction of electrical applications in the relevant countermeasures

2.1 Electrical design and protection measures

① Electrical grounding

In the construction of intelligent electrical applications, electrical grounding in the distribution system plays an important role in the system security and stability of the important guarantee. With the development of the intelligent building, the electrical system has undergone tremendous changes, in which the grounding system is no exception. So far, the common electrical grounding system TN-S, TN-C and TN-CS three.

Among them, TN-S electrical grounding system uses a three-phase five-wire system, that is, three Fire-Wire and neutral line, to protect the ground wire; TN-C electrical grounding system uses a three-phase four-wire system, that is, Neutral line; TN-CS electrical grounding system is composed of the above two systems, the former responsible for electricity into the household, which is responsible for electricity into the home, effectively improving the front of the two systems defects and deficiencies, reducing the construction Cost, and improve system security and stability.

② Electrical protection

Building intelligent to be achieved in the electrical protection function mainly from the exchange of work grounding, safety grounding, DC working grounding, lightning protection grounding, shielding and anti-static grounding these five aspects of the ground resistance should be less than 4Ω, 4Ω, 4Ω, 10Ω, 100Ω. AC grounding means that the grounding of the transformer or neutral (N) ground; safety protection grounding means that the electrical equipment is not energized metal parts using metal wire and grounding to connect, but not with the protective grounding wire or neutral connection; DC working grounding refers to the larger cross-sectional area of the copper core insulated wire connected to electronic equipment, so that grounding resistance; lightning protection grounding refers to a series of lightning protection system to prevent lightning from the building electrical system damage; shielding and anti-static grounding is a modern building to prevent electromagnetic interference the best way.

2.2 Technical measures and management measures of building electrical personnel

① Technical measures

First, regular technical testing of electrical personnel, and appropriate disclosure of test results. Second, we must strictly in accordance with the design drawings, if the design changes, subject to the design staff, the construction of the person in charge, the supervision team signed the consent, not the same time, the construction of the construction team to ensure that the quality of the construction team from the construction site to effectively reduce the risk of construction; Third, the electrical installation works before the need to obtain the relevant quality inspection departments of the permit, the installation of materials to meet the design requirements; Fourth, the electrical installation of the acceptance, always adhere to the strict, high standards of the principle. To strictly check the pipeline steel pipe, electrical equipment, junction boxes, lightning protection devices, etc., to effectively improve the phenomenon of shoddy; Fifth, to ensure that the electrical system integrity, such as whether the drawings meet the design requirements, the price is real and objective whether the documents are complete and so on.

② Management measures

In view of the management of electrical personnel, the construction unit to introduce high-tech talent, pay attention to staff training, to build an effective electrical personnel management system, to some extent to promote the development of the modern intelligent building. All in all, we have a new understanding of the electrical system in the intelligent building of
the building. The efficient management system of the electrical personnel has a positive effect on the wide application of the intelligent electrical system. With the development of information technology, we must continue to promote the construction of horizontal construction of modern engineering construction, promote international academic exchanges, according to market development rules to improve the management system of electrical personnel, so as to promote the future development of China’s intelligent building.

2.3 Standardization of intelligent building system

Perfect intelligent building design should be consistent with the national design units and the construction sector of the relevant policies and regulations and system norms. A building that does not have comfort, practicality, and safety is meaningless. The most basic requirement of an intelligent building is to ensure the safety of personal equipment. Especially for some of the higher investment costs, more intensive staff of intelligent buildings, the security is even more important, should strictly follow the relevant policy norms.

It can be seen that the development of effective and unified building policy norms is necessary, but for the study of the development of intelligent building standards do not need to spend too much manpower, material and financial resources, as long as the existing standard system for a certain consolidation. You can form a relatively complete set of intelligent building system norms for the future development of intelligent building system to provide protection.

3 Conclusion

All in all, intelligent building electrical system is the product of the development of science and technology, is the crystallization of modern architecture and information technology integration. With the accelerated pace of urban modernization, many intelligent buildings stand in the sky, the scale of the modern intelligent building continued to expand, the corresponding power system should follow the development. In the foreseeable future, the traditional architecture will become more and more intelligent, which is determined by the inevitability of social progress, building intelligent development prospects immeasurable.

References


