TALLINNA TEHNIKAÜLIKOOL
INSENERITEADUSKOND
Elektroenergeetika ja mehhatroonika instituut

KAHEKORDSE PARKIMISSEADME ARENDUS

TWO-STOREY PARKING DEVICE DEVELOPMENT

BAKALAUREUSETÖÖ

Üliõpilane: Krister Veevo

Üliõpilaskood: 142233MAHB

Juhendaja: Kaimo Sonk

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KOKKUVÕTE

Käesoleva bakalaureuse lõputöö eesmärgiks oli süveneda süvitsi parkimiskohtade vähesuse probleemi, kaardistada parklate ehitajate valukohad ning leida probleemile lahendus.

Bakalaureusetöö koosneb seitsmest põhiosast. Esimeses osas tuuakse välja erinevad olemasolevad panipaikade ning parkimislahendused. Analüüsitakse nende plusse ja miinuseid ning mõeldakse välja parkimisseade, mida arendama hakata.

Teises peatükis tehakse uuring Tallinna erinevates linnaosade nii vastvalminud kui ka alles ehitamisel olevate uusarenduste parkimiskohtade ning panipaikade hindade kohta.

Kolmandas peatükis tehakse turu-uuring ning tehti intervjuud arhitektiga, parkimisettevõtte arendusjuhiga ning arendusfirma kliendikogemuse juhiga. Turu-uuringu käigus kaardistatakse parklate ehituse valukohad ning selgub, kes tegeleb parkimislahenduste valikuga. Intervjuude käigus saadi positiivset tagasisidet ning leiti potentsiaalne klient, kellele esimesed parkimisseadmed maha müüa.

Neljandas peatükis tehakse vahekokkuvõte. Välja tuuakse milliste mõtetega alustati ning milliste mõtetega tuleb edasi minna. Selgub, et algne mõte parkimiskoht ühendada panipaigaga ei ole jätkusuutlik, kuna tuleohutuse nõue teeb kogu arendamise palju keerulisemaks.

Viiendas peatükis tegeletakse kontseptsiooni loomisega ning mudeli modelleerimisega. Tuuakse välja erinevad nüansid mida silmas pidada arendamisel. Samuti tuuakse välja mis andurit ning mootorit kasutada, millist draiverit kasutada ning millise pinnakattega peaks kogu seade olema.

Kuuendas peatükis tuuakse välja edasiarenduste võimalused. Räägitakse mida võiks tehniliselt arendada ning uurida kas on olemas vastupidavamaid ja odavamaid alternatiive esialgsel mudelil kasutatud materjalidest.

Seitsmendas peatükis tuuakse välja toote omahind. Kuna töö eesmärgiks ei olnud teha lõplik mudel, siis on väga raske öelda kui palju võiks olla toote omahind. Erinevatele andmetele tuginedes võiks hind jääda hinnanguliselt 12000 euro ümbrusesse.

Bakalaureusetöö täitis oma eesmärgi. Süveneti parkimise probleemi ning leiti uudne lahendus hoidmaks tulevikus kokku maa-ala, mida kasutatakse parklate rajamiseks. Järgnevalt tuleb parkimisseade detailideni ära lahendada ning luua prototüüp ja hakata seda testima. Arendustöö käigus saadi juurde palju teadmisi ja oskusi, mis on kindlasti abiks tuleviku projektides.

SUMMARY

The purpose of this thesis was to go deep into the problem of the lack of parking spaces, to map the problems of the real estate developers and to find the solution to these problems.

The thesis consists of seven main chapters. The first chapter brings out already existing solutions for storage rooms and parking spaces. Their pros and cons were analysed and a viable parking system was contrived.

In the second chapter further research is carried out about storage rooms and parking spaces of the new houses and the houses that are currently being built in different city districts.

In the third chapter marketing research is carried out where interviews were made with an architect, a parking company development leader and a customer service leader of a real estate developing company. The marketing research mapped new parking lots problems and it was determined who make the decisions about parking lots. The project received positive feedback from the interviews and a potential client was found for the first parking systems.

In the fourth chapter there is an overview of the current progress. It brings out the original thoughts that this work begun with and what are the prospects to continue with. It turns out that the original idea which was to combine a parking space and a storage room together is not the way to move on because of the fire safety requirements that make the developing process more demanding.

The fifth chapter deals with developing the concept and making a 3D model of the parking system. This chapter brings out the factors to keep in mind while developing the system. It also brings out what kind of sensors and motor are used, which driver to use and which coating the metal parts should have.

The sixth chapter gives an overview of the further development options for this project. Further research is needed for the technical aspect of the project to find out if there are more resilient and cheaper alternatives for the materials used in the original model.

The seventh chapter outlines the building price for the parking system. It is very hard to determine the exact building price because the purpose of the thesis was not to develop the final and detailed model. Based on different data, the building price is expected to be around 12,000 euros.

To conclude, the thesis fulfilled the goals that were set. The process went deep into the problem and found a solution to economize the land that parking lots take in the future. The next step to take is to make the final and detailed model and build a prototype to start testing. A lot of theoretical and practical knowledge was obtained during the writing of this thesis that can be utilized in the next projects.